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Algemene Praktisynsreeks

PLASENTA PREVIA

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Voorgeboortelike bloeding kan te wyte wees daaraan dat die plasenta laag in die uterus ontwikkel het en geheel of gedeeltelik in die laer segment en voor die voorliggende deel van die fetus geleë is. Hierdie toestand van sake heet plasenta previa en bloeding is *onvermydelik* voor geboorte kan plaasvind, in teenstelling met abruptio placentae, waar bloeding *toevallig* voorkom as gevolg van loslating van 'n plasenta wat normaal geleë is in die fundus van die uterus.

Die volgende klassifikasie van oorsake van voorgeboortelike bloeding is algemeen in gebruik:

1. Abruptio placentae.
2. Plasenta previa.
3. Plaaslike oorsake in die serviks of vagina, bv. poliepe of karsinoom.
4. Onbepaalde oorsake: In 'n aansienlike aantal gevalle, gewoonlik van mindere bloeding, bly die oorsaak onbekend.

Etiologie van Plasenta Previa

'n Bevredigende verklaring vir die rede waarom die plasenta in sommige swangerskappe op so 'n abnormale en potensieel gevaarlike plek ontwikkel, bly agterweë, maar hier volg 'n paar feite en teorieë:

Die toestand kom meer algemeen voor by multiparae—moontlik mag die verminderde tonus van die uterus toelaat dat die ovum laer afkom in die uterusholte voor inplanting plaasvind.

Plasenta previa kom ook betreklik meer algemeen voor by tweelingswangerskappe, te wyte aan die groter oppervlakte van die plasenta.

'n Ongesonde desidua—miskien in gevalle wat tevore endometritis van die een of ander soort gehad het, bv. na 'n miskraam—mag meebring dat die plasenta oor 'n groter oppervlakte van die uterusholte moet uitsprei om genoegsame voeding vir die fetus te verkry.

Die ovum mag maar net toevallig inplanting verkry in die desidua van die laer segment.

Klassifikasie van Plasenta Previa

Die volgende klassifikasie is tans algemeen in gebruik:

Graad 1. Plasenta grotendeels in die boonste segment, maar die onderste rand strek tot in die laer segment.

Graad 2. Plasenta strek tot by die rand van die interne os.

Graad 3. Plasenta bedek interne os wanneer dit toe of gedeeltelik ontsluit is.

Graad 4. Die hele plasenta is in die laer segment en bedek die os selfs wanneer dit vol ontsluit is.

Dit het egter onlangs duidelik geword dat dit klinies van die grootste belang is om te onderskei tussen 'n anterior plasenta previa en 'n plasenta wat posterior oor die sakrale promontorium geleë is. Laasgenoemde is potensieel veel gevaarliker omdat dit die voorliggende deel van die fetus meer effektief verhinder om in die bekken af te sak.

Die volgende klassifikasie mag dus nog sy voorgangers in die verloskundige verhandelings vervang:

Graad 1 en 2—anterior of posterior.

Graad 3 en 4.

Meganisme van Bloeding

Met 'n normale ligging van die plasenta is dié deel van die vrugsak wat in kontak met die laer segment is net vliese, en die laer segment kan rek en opgeneem word sonder enige versteuring van die inhoud.

Waar die plasenta egter previa is, is die laer pool van die vrugsak geanker aan die laer segment deur die plasentale villi, en uitsetting of opname van die segment, gewoonlik eers na die 30-32ste week, versteur die hegting van die plasenta en veroorsaak bloeding. By multiparae, waar die laer segment slapper is, mag hierdie meganisme betreklik later eers in werking kom.

Die meeste bloeding kom van die moederlike sirkulasie, en daar moet onthou word dat die ontblote sinusse in die laer segment veel meer vryelik bloei na loslating van die plasenta as wat die geval is in die boonste segment, waar hul omsluit is deur dik miometrium, die sametrekking waarvan bloeding baie effektief stuit.

Die fetus mag egter ook bloed verloor uit vate in geskeurde villi, of deur ruptuur van die vasa praevia—die kleinere vertakkinge van die naelstringvate.

Simptomatologie

Bloeding kan ter eniger tyd gedurende die swangerskap plaasvind, maar volgens definisie is dit slegs voorgeboortelike bloeding wanneer dit na die 28ste week voorkom. Voor die tyd moet dit deurgaan as dreigende miskraam en 'n onbekende persentasie van miskrame moet wel aan 'n voorliggende plasenta te wyte wees.

'n Skielike pynlose bloeding wat vanself ophou, maar van tyd tot tyd weer voorkom, is tipies en word ‚waarskuwende' bloeding genoem. By die grootste persentasie van gevalle kom die eerste episode hiervan tussen die 32ste en 37ste weke voor. Die erns van bloeding varieer aanmerklik, maar ernstige bloeding kom selde voor sonder een of twee voorafgaande ‚waarskuwende' bloedings. Bloeding mag ook geheel en al afwesig wees, selfs in Graad 4 plasenta previa, totdat kraam begin.

Die afwesigheid van pyn in die tipiese geval van plasenta

previa is toe te skrywe aan die feit dat slegs die normale pynlose sametrekkings van die uterus wat gedurende swangerskap voorkom, nodig is om die laer segment te rek.

DIAGNOSE VAN PLASENTA PREVIA

Voorheen is die diagnose van plasenta previa gemaak uitsluitlik op die bevindinge van vaginale ondersoek, wat onmiddellik lewensgevaarlike bloeding kan veroorsaak. So 'n ondersoek moet dus nooit uitgevoer word in 'n geval van voorgeboortelike bloeding nie, behalwe onder ideale omstandighede in 'n hospitaal—hieroor later weer.

Die diagnose kan egter met redelike sekerheid gemaak word sonder vaginale ondersoek.

(*a*) *By buik-ondersoek* moet plasenta previa vermoed word by enige pasiënt met 'n geskiedenis van voorgeboortelike bloeding wanneer gevind word dat die voorliggende hoof van die fetus nie in die bekken wil ingaan nie, of waar daar 'n abnormale ligging is—dwars of skuins, of selfs 'n stuitligging.

Aan die anderkant, wanneer die fetale hoof in die bekken is, kan plasenta previa vir praktiese doeleindes uitgeskakel word—met die voorbehoud dat wanneer die koppie nog baie klein is (bv. 30 weke) daar plek is in die bekken daarvoor sowel as vir die rand van die plasenta soos in Graad 1, in watter geval so min daarvan in die laer segment is dat dit geen wesenlike gevaar inhou nie, maar tog nog die oorsprong van die bloeding is vir diagnostiese doeleindes.

Dit moet hier gemeld word dat die plasenta *in utero* 'n veel groter orgaan is as wat dit voorkom in die bakkie na verlossing, en 'n laagliggende plasenta hou die voorliggende hoof van die fetus baie effektief uit die bekken. Dit is veral waar in die geval waar die plasenta previa agter oor die sakrale promontorium geleë is. Waar die plasenta in die laer segment strek tot op die voorste wand, is daar nog kans vir die fetale hoof om daaragter verby in die bekken in te gaan, veral wanneer kraam begin.

Nog 'n kliniese teken wat mag help is die volgende: Wanneer die naelstring laag geheg is, wat waarskynlik is in plasenta previa, veroorsaak drukking van die fetale hoof op die naelstring dat die fetale hart aanmerklik stadiger word. Hierdie toets kan uitgevoer word deur òf op die fundus uteri, òf op die voorliggende hoof self te druk.

Abnormale liggings kom algemeen voor in gevalle van plasenta previa. In een reeks van 170 gevalle was daar 33%—20 dwars- of skuinsliggings, 20 waar die hoof voorliggend was, maar hoog en na eenkant verplaas; en 15 stuitliggings.

Twintig van hierdie 170 gevalle van plasenta previa is van die voorgeboorte-kliniek af toegelaat vir spesiale ondersoeke met die oog op moontlike plasenta previa *nog voor enige bloeding* plaasgevind het.

(*b*) *Differensiële diagnose van abruptio placentae.* Die teenwoordigheid van hoë bloeddruk, met of sonder albuminurie en edeem, maak die diagnose van abruptio 'n moontlikheid wat in gedagte gehou moet word. Die afwesigheid van tekens van toksemie sluit egter hoegenaamd nie die moontlikheid van abruptio uit nie.

Die voorkoms van 'n erg verborge abruptio placentae is natuurlik so uitgesproke dat daar in 'n tipiese geval geen twyfel oor die diagnose kan wees nie—'n plankharde teer uterus met afwesigheid van fetale hartklanke. 'n Kleiner abruptio met loslating van 'n gedeelte van die plasenta van die voorwand van die uterus kan aangedui word deur die teenwoordigheid van gelokaliseerde teerheid.

(*c*) *Ondersoek van die vagina en die serviks.* In gevalle waar 'n skielike bloeding geheel en al ophou, moet 'n vaginale spekulumondersoek 'n dag of twee daarna uitgevoer word om 'n plaaslike oorsaak, soos bv. 'n poliep of karsinoom, uit te sluit.

(*d*) *Röntgenologiese diagnose.* Waar plasenta previa vermoed word in 'n geval van voorgeboortelike bloeding, maar waar die fetus nog te klein is om 'n redelike vooruitsig op oorlewing te hê, is dit vir die verwagtende moeder van die allergrootste belang dat die diagnose bevestig word. Die rede hiervoor is dat sy in die hospitaal sal moet verwyl, indien die plasenta wel previa is, tot die fetus 'n redelike grootte bereik het. Indien plasenta previa egter uitgesluit kan word, hoef sy nie al die tyd van haar gesin geskei te word nie.

Voorheen was dit alleen deur vaginale ondersoek moontlik om die diagnose te bevestig, naamlik deur 'n digitale ondersoek deur die serviks na die plasenta of rand daarvan in die laer segment. So 'n ondersoek het egter feitlik sonder uitsondering die risiko gedra van gevaarlike bloeding wat dan onmiddellike verlossing genoodsaak het, en as die baba dan nog baie onvolwasse was, het dit 'n swak vooruitsig gehad om te lewe.

Diagnose Sonder Vaginale Ondersoek

Reeds jare lank al is daar gesoek na metodes om vas te stel of 'n plasenta previa teenwoordig is, sonder om 'n vaginale ondersoek te moet uitvoer.

Die volgende röntgenologiese metodes is probeer, maar onveilig of onprakties bevind:

1. *Amniografie*—inspuiting van 'n kontrasmedium in die vrugwater om die plasenta as 'n vullingsdefek te wys.

2. *Sistografie.* Inspuiting van 'n kontrasmedium in die blaas, om in gevalle van anterior plasenta previa te toon dat daar iets is wat die voorliggende deel van die fetus op 'n afstand van die blaas hou.

3. *Aortografie en retrograde femorale arteriografie.* Inspuiting van 'n kontrasmedium in dié slagare wat binne 'n oomblik die plasentale bloedvatpatroon in die boonste of laer segment toon.

4. *Die gebruik van radio-aktiewe sout binne-aars.* Hierdie prosedure word gevolg deur bepaling van maksimum aktiwiteit met 'n Geiger-apparaat oor die boonste of onderste segment.

5. In die afgelope 10 jaar is egter 'n diagnostiese metode ontwikkel wat 'n geskoolde vertolker in staat stel om van 2 of 3 gewone röntgenfotos 'n korrekte diagnose in feitlik alle gevalle te maak. Hierdie metode is gebaseer op die volgende twee röntgenologiese beginsels: Direkte sagteweefsel röntgenfotografie, en die verhouding deur swaartekrag van die fetale hoof tot die bekken.

(*a*) In 'n laterale röntgenfoto van die buik van 'n swanger vrou in die laaste paar maande van swangerskap, kan twee duidelike lyne in die omtrek van die uteruswand gesien word. Die buitenste lyn is die peritoneale oppervlakte van die uterus, die binneste een is die lagie onderhuidse vet van die fetus. Waar die twee lyne ewewydig 'n halfduim of wat van mekaar loop, of waar die oneweredige onderbrekings wat ooreenstem met die fetale ledemate herkenbaar is, is die plasenta nie teenwoordig nie. 'n Eweredige dik sekelmaan-vormige skaduwee tussen die buitelyn van die uterus en dié van die fetus *is die plasenta.*

'n Laterale röntgenfoto van die buik kan beter met 'n

baie helder lig bestudeer word met die oog op hierdie punte as met 'n gewone röntgenfoto-toonkassie.

(*b*) 'n Tweede foto wat geneem kan word, is 'n laterale bekkenfoto (pelvimetrie) met die pasiënt staande.

As die plasenta (*a*) in die boonste segment aangetoon kan word en/of (*b*) die fetale hoof in die bekken, of só in die ingang daarvan dat daar nie nog ruimte vir plasenta ook is nie, kan plasenta previa uitgesluit word.

As die plasenta egter nêrens in die boonste segment aangetoon kan word nie, en as dit lyk of daar wel ruimte vir 'n posterior plasenta previa mag wees tussen die fetale hoof en die sakrale promontorium, word 'n derde foto geneem.

(*c*) Laterale pelvimetrie, terwyl die pasiënt sit met haar bene reguit en agteroor leun tot haar rug met 'n hoek van omtrent 60° gestut word. In die afwesigheid van 'n plasenta wat afstrek op die agterste wand van die uterus tot oor die promontorium, sal die fetale hoof op hierdie foto terugsink tot binne 1½ cm. van die promontorium af; 'n posterior plasenta previa hou die kop 3-4 cm. weg van die promontorium af.

Op dieselfde manier hou 'n anterior plasenta previa die kop 3 cm. of meer weg van die pubiese simfise af. Om hierdie maat te neem is egter slegs die staande laterale pelvimetrie nodig. Om die maksimumwaarde van genoemde röntgenfotos te verkry, *moet* die pasiënt reg voorberei wees. Dit is van die grootste belang dat die blaas en rektum leeg moet wees—indien nie, kan die fetale hoof nie in die bekken insink nie. Twee gliserien-rektaalsteekpille vooraf sorg dat die rektum leeg kom.

Verder is dit van fundamentele belang om te verseker dat die fetale hoof wel voorliggend is wanneer die röntgenfoto geneem word en so naby as moontlik sentraal, of net bo, die bekken-ingang.

Wanneer 'n dwarsligging bv. teenwoordig is, is die genoemde röntgenfotos van geen waarde nie en herhaling daarvan verdubbel die gevare van bestraling.

Spesiale toewyding en hoë kwaliteit röntgenfotos het Hartley van Manchester nog onlangs in staat gestel om behalwe deur bostaande twee beginsels, addisionele akkuraatheid te verkry deur die plasenta, as dit verkalk, daarin te lokaliseer; en hy kan nou in feitlik 100% van gevalle die ligging van die plasenta met sekerheid bepaal.

Diagnose deur Vaginale Ondersoek

Hierdie metode, wat vroeër die enigste manier was om die diagnose te bevestig, word vandag meer bepaald aangewend om die graad van plasenta previa te bepaal en sodoende die beste behandeling te beplan, en word as sodanig dus liewers onder daardie hoof bespreek.

BEHANDELING

Die benadering van die probleem van plasenta previa het in die afgelope 15 jaar verander. Voordat die werk van Macafee in Belfast en Johnson in die V.S.A. bekend gemaak is, is die diagnose gemaak deur vaginale ondersoek onder narkose; en wanneer die plasenta in die laer segment gevoel is, het dit gelei tot òf die breek van vliese, of Braxton-Hicks-kering met afbring van 'n been, òf die gebruik van Willett-tange, òf tot keisersnee. Die oogmerk was beheer van bloeding totdat verlossing op die gouste manier bewerkstellig kon word. Die moederlike sterftesyfer was weliswaar oneindig laer as in Mauriceau se dae van *accouchment forcè*, maar nog in die omgewing van 10% aan die begin van hierdie eeu en 5% in die veertigerjare, toe keisersnee meer en meer in gebruik gekom het vir alle grade van plasenta previa, behalwe in die geringste gevalle, waarvoor die vliese gebreek is; kering en Willett se tange het al in onguns geraak.

Van die begin van die eeu tot die vorige dekade het die fetale sterftesyfer egter slegs van 60-50% gedaal. Aangesien die fetus in die meeste gevalle nog baie prematuur was, moes die lewe van die baba in die meerderheid van gevalle prysgegee word. Die haakplek was by die vaginale ondersoek onder narkose. Dit was die enigste manier waarop 'n diagnose gemaak kon word, en in die uitvoering daarvan het daar onvermydelike vermeerdering van die bloeding voorgekom, dikwels 'n stortvloed, wat noodgedwonge moes lei tot die voorafgaande drastiese maatreëls om verlossing te bespoedig met die doel om die moeder se lewe te red; maar wat gewoonlik die dood van die baba beteken het.

Macafee het getoon dat dit in die meeste gevalle van plasenta previa veilig is vir die pasiënt om voort te gaan met haar swangerskap tot nader aan voltyd, selfs na 'n ‚waarskuwende' bloeding voorgekom het, en op die manier die fetus 'n kans te gee om te groei tot dit groot genoeg is om 'n redelike vooruitsig op oorlewing te hê na verlossing.

Aangesien hierdie optrede meebring dat die pasiënt in die hospitaal moet verwyl met alles in gereedheid vir onmiddellike optrede in geval van ernstige bloeding, is dit vir haar van die allergrootste belang dat die diagnose so vroeg moontlik bevestig word, soos reeds bespreek, om onnodige skeiding van haar gesin te verhoed.

Soos aangetoon is dit uiters selde dat die eerste bloeding nie slegs 'n ‚waarskuwende' bloeding is nie. Geen geval van voorgeboortelike bloeding mag tuis onder observasie gehou word nie, en die eerste stap in die behandeling is hospitalisasie.

By toelating moet die pasiënt se hemoglobien en bloedgroep bepaal word. Haar serum moet pal in die yskas gehou word en as sy in die hospitaal moet bly moet dit elke 14 dae hernu word sodat daar geen oponthoud is wanneer verenigbaarheid vir bloedoortapping skielik nodig mag word nie.

Die hemoglobien moet tot op bevredigende hoogte gebring word (12 g.% of meer)—indien nodig deur bloedoortapping, en toediening van Fe terwyl sy wag doen geen kwaad nie.

Of die fetus normaal is, moet van die röntgenfoto vasgestel word indien moontlik (kongenitale abnormaliteite is meer algemeen in gevalle van plasenta previa).

Nou is die behandeling eenvoudig:

1. As die fetus lewend en normaal is, en bloeding onder beheer, wag 'n mens tot die fetus groot genoeg is en bevestig dan die diagnose en graad van plasenta previa finaal deur *vaginale ondersoek* onder narkose in die teater met binneaarse indruppeling aan die gang, verenigbare bloed in voorraad, en alles gereed vir 'n keisersnee.

Dit is nie nodig of wenslik om direk die vinger deur die serviks te steek en na die rand van die plasenta te voel nie. Eers bepaal 'n mens of die fetale skedel aangemoedig kan word om in die bekken te gaan. Daarna word versigtig deur die vaginale fornices gevoel na die harde skedel of iets sags voor die skedel. Is daar dan nog twyfel, kan 'n vingerpunt versigtig deur die serviks gestoot word. As bloeding begin sodra dit gedoen word, moet nie nog na die rand van die plasenta gevoel word nie— daar *is* dan 'n ernstige graad van plasenta previa teenwoordig en daar moet onmiddellik tot 'n keisersnee oorgegaan word.

Indien daar niks meer as 'n Graad I anterior plasenta previa teenwoordig is nie, kan die vliese gebreek word; in alle ander gevalle van plasenta previa is keisersnee raadsaam.

2. As die fetus dood of ooglopend abnormaal is, of bloeding aanhoudend, of die pasiënt in kraam, moet dieselfde prosedure uitgevoer word, maar *sonder om te wag*—met dié voorbehoud dat die moeder se toestand so goed moontlik gemaak moet word met bloedoortapping, ens.

3. As die fetus lewend is met 'n redelike vooruitsig op oorlewing, maar as ernstige bloeding optrede noodsaaklik maak, veral as daar fetale nood is, moet 'n keisersnee sonder voorlopige ondersoek onder narkose uitgevoer word. Die toediening van O_2 gedurende hierdie kort tydperk van haastige optrede mag die baba se lewe red.

4. (*a*) As die fetus dood is, of abnormaal, of uiters klein, en daar is by ondersoek onder narkose 'n voetjie wat afgebring kan word om bloeding te stop, is dit toelaatbaar.

(*b*) Waar dieselfde omstandighede vir die fetus geld in gevalle van hoofligging, mag 'n Willett-tang aan die fetale kopvel geheg word mits daar slegs 'n mindere graad van plasenta previa teenwoordig is en bloeding op dié manier beheer kan word deur trekking aan die koppie.

(*c*) Selfs al is die fetus dood, abnormaal, of baie klein, moet in alle gevalle van Graad 3 en 4 plasenta previa 'n keisersnee uitgevoer word.

Prognose. In die dae van onmiddellike aktiewe optrede was die moederlike sterftesyfer 5-10% en die fetale sterftesyfer 50-60%.

Die moederlike sterftesyfer is vandag oral baie laag (onder ½%) en die fetale sterftesyfer 18-20%.

THE PHYSICAL DEVELOPMENT OF A PRIVILEGED GROUP OF AFRICAN CHILDREN

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The height (body length) and the weight of children depend on a number of factors of which the most important are age, heredity and environment. In under-developed areas the exact age of the children is often unknown and this may be one of the reasons why few attempts have been made to establish height and weight standards for African children.

All available data indicate that the height and weight standards of African children are below those of White children in this country, in North America and in Great Britain.[1-3] This may be due to heredity or environmental factors. Growth is retarded by adverse environmental factors, especially nutritional deficiencies, chronic infections, parasitic infestations (malaria, hookworm disease), or repeated attacks of acute debilitating illnesses (diarrhoeal disorders). Hitherto it has been impossible to gauge to what extent adverse environmental factors are responsible for the smaller stature of African children.

We were fortunate in having access to a well-defined group of African children from an environment where growth-retarding influences were probably not greatly different from those obtaining in average White families in this country or in socio-economically advanced populations overseas. The heights and weights of these African children are presented in this paper and they are compared with those of 'superior' White American children.[4]

MATERIAL AND METHODS

The study is based on the heights and weights of 72 African boys and 71 African girls under the age of 11 years whose mothers are fully qualified nursing sisters employed by the City Health Department of Johannesburg. The exact birth date of all the children is known. The families concerned could be considered to be a privileged group, because their incomes assured adequacy of food, and the training of the mothers made it likely that the food was reasonably nutritious and varied. Furthermore, personal hygiene and sanitation were superior to that of the average African population and, finally, it was unlikely that debilitating illnesses of the children would have remained unnoticed or untreated for any length of time.

The tribal distribution of the parents was as follows: Xosa 20, Sotho 18, Zulu 11, Swazi 6, Tswana 5, Mopedi 3, and Morolong 1. In a further 13 families the father's tribal origin differed from that of the mother's.

Excluded from the series were all children under 1 year of age, because most of the mothers were still on maternity leave, and all children who were not living with their parents, in nearly all instances because they were at boarding schools. No children were excluded because of ill-health or stunting of growth.

The heights and weights of the children were compared with the Iowa City standards of 'superior' American children.[4]

The heights of the mothers were compared with the average height of White Canadian women between the ages of 20 and 40 years.[5]

RESULTS

Fig. 1 shows that the weight/age and height/age distribution of the 72 boys compare favourably with those of 'superior' American children.

Fig. 2 shows that the weight/age values of the 71 girls are throughout slightly below the American standards while the height/age values of the girls fall slightly below American standards only after the age of 5 years.

The heights of the mothers are shown in Table I. The average height was 62·3 inches (range 56—68 inches). The average height of Canadian women between the ages of 20 and 40 years is 62·7 inches.

COMMENT

The number of children in this survey was insufficient for the calculation of height and weight curves, and for this reason the data of each child were entered on growth charts based on the measurements of a group of 'superior' American children. With minor exceptions the heights and weights of the privileged African children tally with their White American counterparts. In a recent survey,[6] the heights and weights of

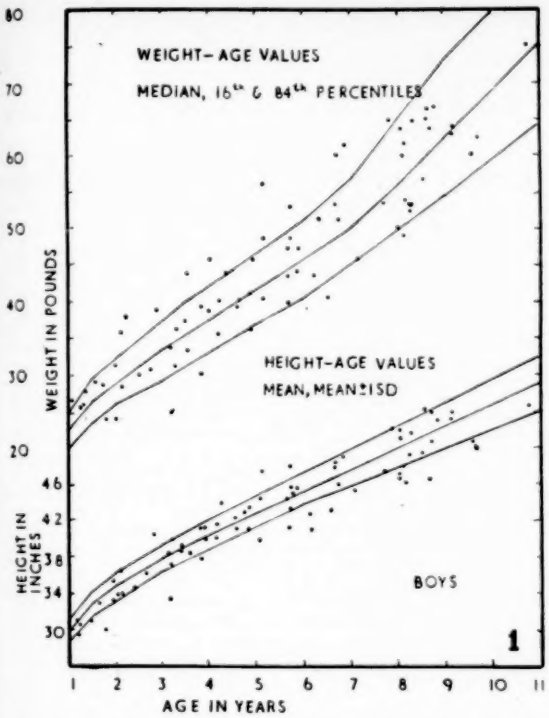

Fig. 1. Weight/age and height/age distribution of 72 African boys (each boy represented by a dot), from privileged families. The line represents a standard of American boys from privileged families.

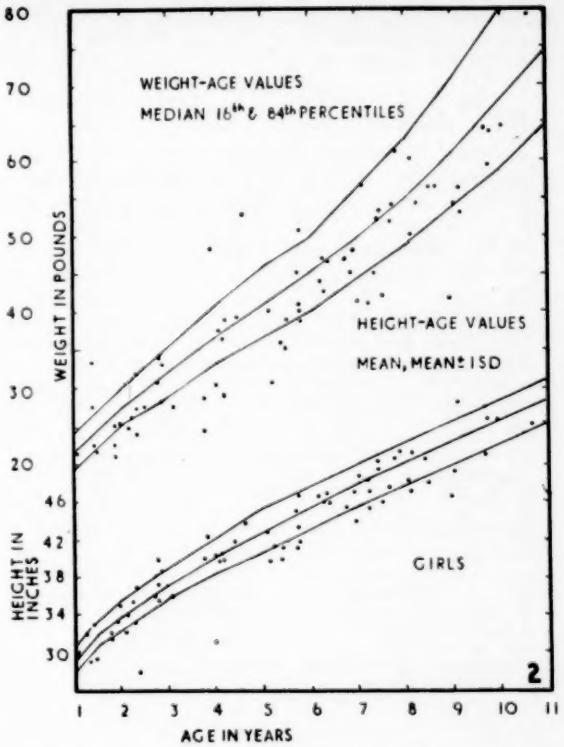

Fig. 2. Weight/age and height/age distribution of 71 African girls (each girl represented by a dot), from privileged families. The line represents a standard of American girls from privileged families.

TABLE I. HEIGHT DISTRIBUTION OF THE MOTHERS

Height in inches (to nearest inch)	*Number of mothers in each group*
56	1
57	1
58	0
59	3
60	6
61	7
62	13
63	17
64	9
65	10
66	7
67	2
68	1

White South African children were found to be a little below the American standards.

Previous reports[1-3] have always stressed that the growth of African children was retarded compared with White South African children. An investigation just completed in Johannesburg[7] confirms the accuracy of these observations. Our survey indicates that this stunted growth is due to environmental factors. The important influence of environment on growth is well known. Greulich[8] has shown that Japanese children from the West Coast of America are substantially taller and heavier than those in Japan. Bakwin and Patrick[9] found that American Negro infants seen at out-patient departments were retarded in development compared with standards of White American infants, but there was no difference between the two racial groups if children from well-to-do families were weighed and measured.

The main environmental factors causing retardation in growth in Africa are poor nutrition, chronic diseases, or frequent attacks of acute debilitating illnesses. In Uganda, Welbourn[10] has shown that there is a marked falling-off in the rate of growth after the age of 9 months. This phenomenon is usually attributed to nutritional factors, but tropical diseases no doubt also play a part in the retardation of growth of children in Central Africa.

In this part of Africa the most prevalent debilitating chronic infection is tuberculosis, but repeated attacks of diarrhoea or chronic salmonellosis may also be of significance. It is not possible to state accurately to what extent these infections retard the growth of local African children, but there is no doubt that they are of minor importance compared with nutritional deficiencies.

We should like to suggest that the Iowa growth charts can be used in nutrition surveys in this part of Africa to detect inadequacies of the diet. The ages of local African children are known with sufficient accuracy, at least in urban areas, to promise reliable results.

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FIBRINOLYSIS AFTER ACUTE MYOCARDIAL INFARCTION AND AFTER THE ADMINISTRATION OF ORAL ANTICOAGULANT DRUGS AND INTRAVENOUS HEPARIN*

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Variation in fibrinolysis was studied in 16 White patients during the first 14 days after acute myocardial infarction. Observations were also made in 5 'control' subjects at rest in bed before and after the oral administration of either phenindione or warfarin sodium in the usual therapeutic doses. Twenty-nine additional patients were observed after the intravenous injection of 75 mg. of heparin sodium as well as after a control injection of normal saline. None of the 'control' subjects had a history suggestive of very recent infarct. Alterations in fibrinolysis were estimated by observing the 1 : 10 blood clot lysis time (CLT) of Fearnley *et al.* as modified by Lackner and Goosen,[1] as well as by the euglobulin lysis time (ELT) described by Von Kaulla and Schultz.[2]

Following acute myocardial infarction there was considerable fluctuation in fibrinolytic activity. In general, lysis time in the first few post-infarction days was longer than it was subsequently. Six of the patients studied showed a sharp decrease in lysis time, i.e. acceleration of fibrinolysis after the first few days; 6 showed little or no decrease in lysis time; and in 2 the lysis time gradually increased. One patient, who died on the 8th day of observation, showed levels which fluctuated wildly and had virtually no lysis 2 days before death. The remaining patient showed a pattern which varied considerably and which it was impossible to classify with certainty. The observations on the 5 control subjects at rest in bed showed less fluctuation and the oral administration of either phenindione or warfarin sodium had no obvious effect on lysis time.

It was not possible to correlate alterations in fibrinolytic activity with the clinical severity of the infarct or with the alterations in plasma fibrinogen which occurred after the myocardial infarct.

Both methods of measuring fibrinolysis (CLT and ELT) appeared to be measuring the same phenomenon in these subjects, and there was a good correlation between the paired measurements of CLT and ELT made on the same samples of blood ($r=0{\cdot}68$, p less than 2%).

A possible effect of heparin used in the treatment of the patients with acute myocardial infarction was noted and this was tested in two different experiments.

1. Eleven subjects were each tested on 2 occasions. An 18-gauge needle was inserted in a forearm vein and patency maintained by a slow infusion of normal saline. Specimens of blood, taken through the needle, were withdrawn before, and at varying periods, after the injection of either 2 ml. of normal saline or of 75 mg. of heparin in a volume of 2 ml. In this experiment no acceleration was noted 10 minutes after the injection of heparin. Euglobulin lysis was accelerated significantly 60 minutes after the heparin injection when compared with the effect of the control injection of saline in the same subject. Clot lysis was significantly faster at 30, 60 and 120 minutes after the heparin injection.

2. Eighteen additional subjects were tested before, and 1 hour after, the intravenous injection of either 2 ml. of normal saline or of 75 mg. of heparin sodium (in a volume of 2 ml.). Acceleration following heparin was not noted in all these subjects, but the mean acceleration produced by the heparin was significantly greater than that produced in control experiments in the same subjects when saline was used instead of heparin. Statistical analysis of the results in all subjects 1 hour after the heparin administration showed significant acceleration of both ELT and CLT.

No effect of heparin on fibrinolysis was noted 10 minutes after the intravenous injection when the plasma concentration and anticoagulant effect of heparin are presumed to be maximal. It is possible that inadequate blood coagulation masked an effect on fibrinolysis. Alternatively heparin may act by stimulating some other mechanism.

Spontaneous acceleration of ELT over the 1-hour period of observation when no heparin was given, was significantly greater in the 14 White subjects than in the 15 non-White subjects. The racial groups were however inadequately contrasted for firm conclusions to be drawn on this score.

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THE PROBLEM OF PAEDIATRIC NURSING

Throughout the country much dissatisfaction has been expressed in regard to nursing in paediatric wards, and it is felt that the standard of paediatric nursing care in South Africa leaves much to be desired. In order to stress the magnitude and the nature of the problem involved, the South African Paediatric Association (M.A.S.A.) prepared a comprehensive memorandum on the problem of paediatric nursing in this country for submission to the South African Nursing Council, and they also requested that the Federal Council of the Medical Association of South Africa be made aware of the problem.

The present status of nursing in paediatric units in South Africa can be summarized as follows:

1. There are very few nurses with suitable paediatric training in South Africa.

2. Sisters and staff nurses of children's wards are 'general-trained', i.e. their maximum average experience of paediatric nursing as trainees is 3 months.

3. Some sisters or staff nurses who assume charge of babies, including premature infants in obstetric units, are similarly ill-equipped for their positions.

4. In accordance with Nursing Council requirements, it is a common practice in many hospitals for a large proportion of the nursing staff to be changed monthly. The need for adequate close supervision by properly trained senior nurses is hindered by this system. Nursing Council regulations specify a ratio of not more than 4 trainees to 1 trained nurse. Inexperienced nurses are posted into paediatric wards early in their training, before they are able to appreciate the importance of certain procedures appertaining to paediatric nursing practice. In non-European wards conditions are often worse.

5. Although there may be less administrative work to be done at night, the *nursing* requirements of sick children and infants under the age of 2 years do not differ materially by day and by night. Yet a skeleton night staff, with limited trained supervision, is expected to cope with an amount of work almost identical to that undertaken with difficulty by twice their number during the day.

6. Because of conditions present in some of the paediatric wards, varying in different hospitals, facilities for isolation of cases and minimizing the spread of infection leave much to be desired.

7. On the basis of the abovementioned considerations it can be stated that the paediatric training of the student nurses, both in respect of the personal care of sick children and of the facilities needed, falls far short of what is required. There is no opportunity for any student nurse to learn paediatric nursing properly and in a properly arranged environment. If a general-trained nurse wishes to have paediatric training, she has limited opportunity for further study.

The present situation regarding paediatric nursing at the Red Cross War Memorial Children's Hospital, Rondebosch, Cape, will serve as a concrete example of how serious the problem is:

When this hospital was opened in June 1956, the nursing staff consisted of sisters and staff nurses, mostly without special paediatric training, and student nurses recruited from the general pool. Gradually, as more wards were opened, extra help in the form of nursing assistants—White and non-White—had to be employed so that the work could be covered. This was far from ideal, but it was realized that, with more and more hospitals opening and a static number of nursing students, the use of nursing assistants was inevitable. Since then the proportion of student nurses has diminished and in August 1958 the nursing establishment of the Hospital consisted of 50 student nurses and 139 certificated nursing assistants; certificated nurses are, however, practically non-existent or unobtainable in Cape Town. Under duress the situation was accepted and efforts were made to train the nursing assistants; an extra sister was appointed for that purpose.

A scheme was submitted to the Provincial authorities whereby the Hospital could be assured of the services of a certain number of student nurses while nursing assistants were being trained for a proposed Provincial certificate of proficiency as a 'paediatric nursing assistant' or some such suitable term. For various reasons a decision on the matter was, however, deferred. It would appear that as from 1960 no assistant nurses, certificated or uncertificated, will be allowed to undertake nursing duties of any kind unless registered with the Nursing Council. In the meantime the allocation of student nurses to the Hospital continues to fall steadily—14 for September 1959—and it is not clear where nursing personnel is to come from in 1960.

How important the paediatric nursing staff is from the paediatrician's point of view, will be clear from the following:

1. The children's doctor is entirely dependent on his nurse. The majority of the patients cannot speak and, unless the person in constant attendance is trained to accuracy in observation and reporting of detail, registered only by trained eyes, ears, hands, and nose, the doctor will be severely handicapped.

2. The menace of infection and of ward-spread is always present even with properly trained staff. With a peripatetic staff of trainees supervised by an equally inexperienced staff of general-trained nurses, the situation becomes perilous.

3. Advances in medicine depend on many kinds of investigation, but the crux of the solution to any problem is in its clinical application. The nurse with her ability to comprehend and carry out meticulously her part of the clinical work, is a key person in the chain of investigators. Without her knowledge and full cooperation, such work cannot be undertaken.

4. With a staff untrained in paediatric nursing, the medical supervision of the patient becomes a source of even more anxiety than it should be. Babies especially, change in

condition so rapidly that an hour's delay in summoning the necessary medical help, especially in acute illness, may be fatal. The suspicion that this has occurred has not been unknown.

5. With the present system of training nurses, the hope of progress in this field is limited. The standards of care required in paediatrics, its hygiene, dietetics, nursing procedures, psychological approach, and even manual dexterity, are entirely different from those used in dealing with adults and adolescents. A paediatric nurse works to a standard which is regarded by the general-trained as unnecessary, even ridiculous, until experience teaches her otherwise. Nothing less than meticulous care will suffice. There is only one way to obtain it and that is by proper paediatric training of the nursing staff responsible for the instruction of student nurses in children's hospitals and maternity units. No sister or staff nurse should assume charge of a children's ward unless she has had special training.

6. There are ample openings for trained paediatric nurses in children's hospitals and wards in general and isolation hospitals, in obstetric hospitals and units, in welfare clinics, crèches, orphanages, and places of safety, as health visitors and as paediatricians' nurses, in the world of commerce, e.g. in pharmaceutical firms and on passenger ships, and in private nursing. With a little extra training a paediatric nurse can become a general-trained nurse of high standard.

We should like to advocate a scheme similar to that existing in Canada. In Canada a girl can choose to do her training either at a general hospital or a children's hospital. If she chooses a children's hospital, the course lasts for 3 years, during which time she spends approximately 6 months at the general hospital and the remainder in the various departments of the children's hospital. She then graduates from the children's hospital as a fully trained nurse who is considered competent to nurse both children and adults. It would seem that the standard of training is extremely high. It certainly produces excellent nurses. The argument put forward in favour of this arrangement, which seems to be a sound one, is that if a nurse is competent and trained to look after children of all ages, she will be quite able to nurse adult patients and, although her preference might be for children's nursing, she is not necessarily limited to this and precluded from doing adult work if she so desires.

A system of training on the above lines would perhaps be better than the introduction of short, high-powered postgraduate courses, which would involve extra time and expense for nurses who are primarily interested in paediatric work. However, nurses doing ordinary training would not be precluded from nursing in the paediatric wards, although their experience would naturally be more limited (as in the present system). Those who spend most of their training period in paediatric wards, would have their passing-out certificates suitably endorsed to that effect.

7. Many girls, of all grades of education, about the time they leave school, are inclined towards a nursing career—particularly for children. Some of them, whose parents can afford to send them, go overseas to train since they cannot do so in South Africa. Many who cannot go overseas and have no urge to nurse adults, abandon the project and are lost to nursing. A paediatric training course would in many cases lead to a general-training course if the duration of the combined course was made attractive. The number of recruits to nursing would soar.

8. There is no prospect that in this country, in the foreseeable future there will be any lack of demand for properly trained paediatric nurses. The country needs them urgently now.

PEDIATRIESE VERPLEGING

Omdat daar ten opsigte van die probleem van pediatriese verpleging in Suid-Afrika 'n toestand van sake ontstaan het wat grens aan 'n noodtoestand, word hierdie probleem tans op alle vlakke druk bespreek—deur Uniale en Provinsiale outoriteite, deur gesaghebbendes in kinderhospitale, deur verantwoordelike liggame van die Mediese Vereniging, en deur die Suid-Afrikaanse Verpleegstersraad. En omdat ons voel dat die kernpunte en die implikasies van die probleem onder die breëre aandag van die mediese professie as geheel gebring moet word, skryf ons hier nou ook daaroor.

Die kern van die probleem lê daarin dat daar in Suid-Afrika vandag baie min verpleegsters is wat 'n goeie opleiding in kinderverpleging gehad het, hoofsaaklik omdat daar geen voorsiening gemaak word vir die opleiding van beginners in pediatriese verpleging nie. Alle verpleegsters wat belangstel in kinderverpleging moet eers as algemene verpleegsters opgelei word. Daarby kom die feit dat die bepalinge van die Verpleegstersraad dit vereis dat verpleegsters wat hul opleiding ontvang gedurig rondgeskuif word van een afdeling na 'n ander. Die gevolg is dat kinderverpleegsters gemiddeld nie veel meer as 3 maande van ondervinding as leerling-kinderverpleegsters ontvang nie.

Nou is dit egter die geval dat kinderverpleging heel spesiale opleiding en ondervinding nodig het, omdat die betrokke probleme so heeltemal anders is. Byvoorbeeld, omdat die meeste pasiënte (klein kindertjies) nie kan praat nie, is die dokter dikwels geheel en al afhanklik van die informasie wat die verpleegster aan hom gee—informasie wat sy weer kry op grond van noukeurige waarneming en afleiding. Om betroubare waarneminge en afleidinge te kan maak, vereis egter noukeurige gespesialiseerde opleiding. Hierdie is maar een voorbeeld van hoe belangrik spesiale opleiding op hierdie gebied is—ander voorbeelde bespreek ons elders in besonderhede.

Die probleem het ook sy onmiddellike praktiese implikasies. Omdat daar 'n tekort aan opgeleide kinderverpleegsters is, is die meeste kinderhospitale (behalwe vir die betreklike klein kern van susters en stafverpleegsters) aangewys op die dienste van leerlingverpleegsters en verpleegstersassistente. Goedgekeurde verpleegstersassistente (met sertifikate) is egter dikwels onverkrygbaar. Die Rooikruis Kindergedenkhospitaal te Rondebosch, Kaap, staan byvoorbeeld voor die toestand dat hy al minder en minder leerlingverpleegsters kry en feitlik sonder verpleegstersassistante moet klaarkom—'n toestand van sake wat daarop dui dat hierdie hospitaal binnekort gedwing mag word om te moet sluit. (Die hospitaal het ongeveer 200 beddens.)

Ons voel dat die oplossing van hierdie probleem waar-

skynlik lê in die rigting van die aanvaarding van 'n soort stelsel wat dit vir 'n voornemende leerlingverpleegster moontlik sal maak om te kies of sy haar opleiding in 'n algemene hospitaal of in 'n kinderhospitaal wil ontvang. As sy kies om haar opleiding direk in 'n kinderhospitaal te ontvang, sal dit beteken dat sy die grootste deel van die 3 jaar wat die opleiding min of meer sal duur, in verskillende afdelings van die kinderhospitaal deurbring—behalwe 'n gespesifiseerde tyd van 6 maande of so wanneer sy na 'n algemene hospitaal sal moet gaan. Elders in die wêreld, byvoorbeeld in Kanada, word skynbaar groot sukses behaal met die opleiding van kinderverpleegsters op die manier wat ons so pas beskryf het.

Aangesien onderhandelinge tussen verskillende hospitaalowerhede en die Suid-Afrikaanse Verpleegstersraad op die oomblik aan die gang is oor hierdie saak, wil ons daarvoor pleit dat die probleem met verbeeldingskrag en visie aangepak moet word sodat ons in hierdie land nie net 'n geskikte formule kan ontwerp waarvolgens die probleem benader kan word nie, maar sodat ons 'n oplossing kan vind wat terselfdertyd ook 'n nuwe bydrae kan wees tot die probleem van kinderverpleging.

TAALRUBRIEK

Die Taalkomitee van die Geneeskundige Skool van die Universiteit van Stellenbosch stel voor om te gebruik:

1. Eng. shunt. Afr. *aftak* (ww.), *aftakking* (s.nw.).
2. Eng. vertex. Afr. *verteks* (mv. -e), en *kruin* in verband met bv. die skedel en die blaas.
3. Eng. neuron pool. Afr. *neurongroep*.
4. Eng. motor neuron. Afr. *motoriese* (en *sensoriese*) *neuron*.
5. Eng. summation, summation curve. Afr. *summasie*, *summasiekurwe*.
6. Eng. insensible. Afr. *onbewus*(te).
7. Eng. rupture. Afr. *breuk* (s.nw.) en *breek* (ww.), *skeur*, *bars*. Die verskillende woorde word in verskillende verband gebruik, bv. 'n breuk van die buikwand, 'n uterusskeur (‚ruptured uterus'), 'n bars (van die appendiks of blindederm), ens.
8. Eng. menopause. Afr. *menopouse* (s.nw.) en *menopousale* (b.nw.), en dan ook pre-menopousaal en postmenopousaal.
9. Eng. liquor amnii. Afr. *amnionvog* en (populêr) *vrugwater*.
10. Eng. consistency. Afr. *konsistensie*. Die komitee translitereer nie graag nie en hou dus ook nie oormatig van konsistensie nie, maar vind geen geskikter woord nie. En dan: ons het al baie woorde met dieselfde vorm, soos frekwensie, pretensie, residensie, ens. In afwagting van beter raad word dit dus voorgestel.

PORPHYRIN METABOLISM AND LIVER FUNCTION IN THE BANTU

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Impaired liver function is common among Bantus. Of 1,102 routine medical and surgical patients of all ages and both sexes examined at the Baragwanath Hospital, Johannesburg, before June 1951, 85·4% showed a reversal of the albumin/globulin ratio, with the use of a biuret method of Wolfsohn *et al.*[1] Many of these patients, with no history of jaundice or liver disease, showed gross abnormalities of 'liver function' tests as assessed by the thymol turbidity and flocculation tests and the Takata Ara reaction. In 1950 Bersohn[2] determined the serum proteins of 100 apparently healthy African males, using a micro-Kjeldahl method.[3] These subjects were drawn from the personnel of the South African Institute for Medical Research, the Johannesburg General Hospital, and the Witwatersrand gold mines. Of these apparently normal individuals 69% showed a reversal of the albumin/globulin ratio. It is generally considered that impaired liver function is attributable to the deficient diets so commonly consumed by the Bantu; syphilis and genetic factors are probably not involved.[4]

Increased excretion of porphyrin in the urine is a rather common finding in the Bantu. Using a sensitive qualitative method for the detection of urinary coproporphyrin, Mentz[5] calculated that positive tests were obtained in 65% of random Bantus and only 15% of Europeans; these figures included tests on normal and hospitalized (non-porphyric) individuals.

The excretion of excessive amounts of porphyrin is common in porphyria. Urinary excretion is also increased, although to a lesser extent, in liver disease (e.g. cirrhosis and hepatitis[6-15] and liver damage due to cardiac failure[16] or pregnancy toxaemia[17, 18]), in vitamin deficiencies (e.g. pellagra[16, 19]), during recovery of the bone marrow after haemorrhage,[20] in pernicious anaemia,[21-28] in pyrexial conditions,[14, 23, 29-31] and after sulphonal, veronal or lead poisoning.[16, 32-34] It was the object of this investigation to ascertain whether the defect in porphyrin metabolism which is commonly found in the Bantu could be ascribed to impaired liver function.

METHODS

(A) Porphyrins

1. *Urine.* (*a*) Coproporphyrin was extracted quantitatively with ether after acidification with glacial acetic acid. The extracts were washed with an alcoholic iodine solution to oxidize porphyrinogen to porphyrin. From the ether solution porphyrin was extracted into hydrochloric acid and estimated colorimetrically. (*b*) Uroporphyrin was extracted with ethyl acetate-amyl alcohol after the urine was buffered to pH 3·0 - 3·2. The porphyrin-containing organic layer was washed with iodine solution and then extracted with hydrochloric acid.

2. *Faeces.* Proto- and coproporphyrin were extracted from a weighed amount of faeces with ether after acidification with acetic acid. The extracts were again oxidized with iodine solution. Coproporphyrin was then extracted with 0·1N HCl and 'protoporphyrin' with 1·5N HCl. The latter solution

undoubtedly contained several prophyrins, but this mixture is here referred to as 'protoporphyrin'. The dry weight of the specimens was estimated and all values were expressed as micrograms per gram of dry faeces.

3. *Colorimetric estimations.* The methods used were similar to those of Rimington *et al.*[35, 36] The optical densities of the HCl extracts were read at 430 mμ and 380mμ and at the peaks of the Soret bands, which differ slightly for the various porphyrins, in the region of approximately 401 - 405 mμ. In the calculations the following extinction coefficients were used:

for coproporphyrin[37]: $E^{1\%}_{1\,cm.} = 8,100$

uroporphyrin[35]: $E^{1\%}_{1\,cm.} = 6,517$

protoporphyrin[38]: $E^{1\%}_{1\,cm.} = 4,890$

4. *Porphobilinogen.* The Watson and Schwartz procedure[39] was used.

(B) Liver Function Tests

The following techniques were used: (1) Thymol turbidity – Maclagan, 1944.[40-41] (2) Thymol flocculation – Neefe and Reinhold, 1946.[42] (3) Colloidal red test – Ducci, 1947.[43] (4) Cephalin – cholesterol flocculation – Hanger, 1939.[44] (5) Takata-Ara reaction – Ucko, 1936.[45] (6) Zinc sulphate turbidity – Kunkel, 1948.[46-47] (7) Alkaline phosphatase activity – King and Armstrong, 1956.[48-49] (8) Van den Bergh reaction.[41] (9) Total bilirubin – Malloy and Evelyn, 1937.[50] (10) Serum proteins – de la Huerga and Popper, 1950.[41, 51] (11) Serum cholinesterase activity – Michel, 1949.[52] (12) Total urobilinogen – Watson, 1936.[53]

(C) Other Tests

The following techniques were used: (1) Total creatinine in urine—Jaffe reaction.[41] (2) Occult blood in faeces—o-tolidine and amidopyrin tests.[54]

EXCRETION OF PORPHYRIN AND UROBILINOGEN IN URINE OF NORMAL INDIVIDUALS

In a series of 12 normal Europeans and 20 normal Bantus one of us (H.E.A.M.) found the highest excretion of coproporphyrin in urine, according to the method used, to be 85μg. in 24 hours or 75 μg. per g. of creatinine and 111 μg. in 24 hours or 99 μg. per g. of creatinine respectively.[5] No uroporphyrin was detected in any of these individuals.

According to Watson[53] and Reinhold[55] normal individuals excrete on the average 0·64 mg. of urobilinogen in 24 hours, while only a small percentage of normal urines contains more than 1·0 mg. It can therefore be assumed that the excretion of more than 1·0 mg. per g. of creatinine is abnormal.

RESULTS

Porphyrin and Urobilinogen in Urine of European and Bantu Patients

The urines of 7 European and 14 Bantu patients chosen at random were examined. The results are given in Tables I and II.

In this experiment only morning specimens of urine could be obtained. Total creatinine was therefore determined and the porphyrin and urobilinogen results expressed in terms of 1 g. creatinine.

The excretion of urobilinogen and porphyrin was normal in 6 out of the 7 Europeans examined. In patient 7 the excretion of both was highly increased; this patient suffered from severe hepatic disease. Patients 1 and 5 were diagnosed clinically as mild cases of hepatitis but, judging from their urobilinogen excretion, there was probably no severe hepatic

TABLE I. EXCRETION OF PORPHYRIN AND UROBILINOGEN IN MORNING URINE OF EUROPEAN PATIENTS

Patient	*Volume (ml.)*	*Creatinine (mg.)*	*Coproporphyrin (μg./vol.)*	*Coproporphyrin (μg./g. creatinine)*	*Urobilinogen (mg./vol.)*	*Urobilinogen (mg./g. creatinine)*
1	250	200	8	39	0·087	0·44
2	250	190	9	47	0·075	0·08
3	160	160	9	59	0·007	0·04
4	250	230	14	61	0·040	0·17
5	205	110	7	65	0·012	0·11
6	250	170	14	84	0·02	0·12
7	250	310	77	248	2·25	7·25

TABLE II. EXCRETION OF PORPHYRIN AND UROBILINOGEN IN MORNING URINE OF BANTU PATIENTS

Patient	*Volume (ml.)*	*Creatinine (mg.)*	*Coproporphyrin (μg./vol.)*	*Coproporphyrin (μg./g. creatinine)*	*Urobilinogen (mg./vol.)*	*Urobilinogen (mg./g. creatinine)*
8	220	211	2	11	0·13	0·060
9	250	113	3	22	0·034	0·210
10	200	200	5	23	0·080	0·40
11	170	300	10	34	0·160	0·540
12	130	100	4	35	0·35	3·50
13	200	300	12	39	0·024	0·080
14	250	450	18	40	0·054	0·120
15	200	100	7	66	0·015	0·150
16	170	80	11	133	1·00	12·00
17	190	76	14	185	0·20	2·60
18	190	110	28	250	0·41	3·70
19	190	110	28	255	6·90	62·70
20	250	190	50	265	0·76	4·00
21	160	90	29	322	0·14	1·60

TABLE III. VARIATION IN EXCRETION OF PORPHYRIN AND UROBILINOGEN IN BANTU PATIENTS

Patient	*Date*	*Volume (ml.)*	*Creatinine (mg.)*	*Coproporphyrin (μg./vol.)*	*Coproporphyrin (μg./g. creatinine)*	*Urobilinogen (mg./vol.)*	*Urobilinogen (mg./g. creatinine)*
22	21·3	250	183	15	86	0·075	0·410
	11·4	190	110	28	250	0·410	3·70
	18·4	250	185	19	104	0·090	0·50
	25·4	230	129	30	233	0·050	0·38
23	11·4	190	140	20	143	0·28	2·0
	15·4	250	190	50	265	0·76	4·0
	18·4	250	100	18	180	0·287	2·87
	25·4	250	170	23	133	0·10	0·64
24	11·4	190	76	14	185	0·20	2·6
	15·4	180	116	22	193	0·24	2·1

dysfunction. In the Bantu patients the excretion of porphyrin was normal in nearly all cases where urobilinogen excretion was normal; only in patient 12 was the urobilinogen excretion raised while that of porphyrin was normal. In all the other patients an increased porphyrin excretion coincided with a rise in urobilinogen excretion. The type of porphyrin excreted in all cases was coproporphyrin; uroporphyrin was not detected.

Variation in the Excretion of Porphyrin and Urobilinogen

The excretion of porphyrin and urobilinogen was followed in 3 Bantu patients with intervals of a few days between determinations. Only morning urines could be obtained, and results were therefore again expressed in terms of 1 g. creatinine. The results are given in Table III.

From these results it can be seen that a normal excretion of porphyrin is sometimes followed by an abnormally high excretion within a few days. Vannotti *et al.*[16] also found the excretion of urinary coproporphyrin to vary in liver disease.

In all 3 patients only coproporphyrin was found; uroporphyrin was not detected. A definite correlation existed between the excretion of coproporphyrin and that of urobilinogen—when one was increased, the other was also increased. This was the case especially in patient 22, in whom the excretion of porphyrin and urobilinogen varied from normal to abnormally high levels.

Porphyrins in Urine and Faeces and Liver Function Tests in European and Bantu Patients

For this experiment complete 24-hour urine specimens were collected at random from 11 European and 18 Bantu patients for the estimation of porphyrins and urobilinogen. During the collection period blood was collected from most patients for liver function tests and faeces for porphyrin estimation. The results are given in Tables IV and V.

Europeans

Porphyrin excretion was normal in 7 patients (nos. 25–31). The urine-faeces porphyrin ratio in these was from 1·5 : 1 to 1 : 3, according to the basis on which the ratio was determined, i.e. μg. per g. dry weight for faeces and μg. per g. of creatinine for urine.

Only in patient 27 were liver function tests definitely abnormal while the excretion of porphyrin and urobilinogen in urine and the urine-faeces porphyrin ratio were normal. Patient 29 showed evidence of only minimal hepatic dysfunction.

Patient 32 showed normal liver function tests, normal excretion of porphyrins in urine and faeces as well as normal urobilinogen excretion, but because of the very low faecal porphyrin excretion, the urine-faeces porphyrin ratio was increased.

In patient 33 porphyrin excretion in the urine was not excessively high, but high-normal. The urine-faeces porphyrin ratio and liver function tests were, however, abnormal.

In patients 34 and 35 porphyrin in the urine was increased while the urine-faeces porphyrin ratio and liver function tests were abnormal. The excretion of urobilinogen was increased in 34 but not in 35.

Uroporphyrin was not detected in any of these patients.

Bantus

In the 10 patients 36 - 45 excretion of porphyrin in urine was normal. The excretion of urobilinogen was increased in 43 and 44 and the urine-faeces prophyrin ratio was abnormal in 37, 40, 43 and 45. Normal liver function tests were obtained in 36 only.

Patient 46 was regarded as a border-line case. The excretion of porphyrin in urine was high-normal, that of urobilinogen normal, but the urine-faeces porphyrin ratio was abnormal. Unfortunately, liver function tests could not be done on this patient.

In the 7 patients 47 - 53 porphyrin excretion in urine was increased. The excretion of urobilinogen was also increased except in 50 and 51. Liver function tests and the urine-faeces porphyrin ratio were abnormal. Uroporphyrin was not detected in any of these patients.

Comparison of Europeans with Bantus

A marked difference in occult blood results was found between Europeans and Bantus. Strongly positive results were much commoner among the European patients, findings which make interpretation of the urine-faeces porphyrin ratio difficult. Brugsch[56] analysed faeces of normal individuals and tabulated the results according to the benzidine reactions given by the specimens. From these tables Barnes[57] calculated the amounts of ether-soluble copro- and non-coproporphyrins, and determined the means of the groups. These figures clearly indicate that the haem from a mixed diet significantly increases the non-coproporphyrins in faeces.

The patients used in this experiment were not taking a meat-free diet when the faeces were analysed, and this probably increased the porphyrin values in Europeans relatively more than in Bantus. It is noticeable, however, that abnormal urine-faeces porphyrin ratios in Bantus were still obtained in cases where stools showed strong or relatively strong occult blood results.

These findings are in agreement with those of Nesbitt *et al.*,[7-10] Watson *et al.*,[11-13] Dobriner,[14] Zeile and Brugsch[15] and Lageder,[6] who observed that urinary coproporphyrin is increased in cases of liver disease. The quantity of coproporphyrin found in our cases is also in agreement with the quantities found by these investigators.

Table V shows a definite correlation between the degree of porphyrinuria and the degree of abnormality of liver function, as is evidenced by the liver function tests and the urine-faeces porphyrin ratios. This is regarded as an important finding, relating abnormal porphyrinuria to impaired liver function in the Bantu. Furthermore, not a single case was found in which porphyrin excretion was increased without there being impaired liver function as well. Apparently the liver was unable to excrete the normal quantities of porphyrin in the bile.

Uroporphyrin Excretion in Liver Disease

According to Rimington *et al.*,[58,59] Schwartz[60] and Lockwood,[61] traces of uroporphyrin may be excreted in normal urine. As much as 5 - 20 μg. in 24 hours have been reported, while not less than 6 other non-coproporphyrins (NCP) were found in very small quantities. With and Petersen[62] found the excretion of NCP, including uroporphyrin, to be increased in a variety of diseases; as much as 50 - 500 μg. of NCP was found in serious, and mostly fatal, conditions.

In our cases described so far only coproporphyrin was found. With the method used, all the porphyrins could be extracted from acidified urine with ether. The excretion, if any, of NCP, must therefore have been very small.

During the investigation uroporphyrin was found in the

urine of only 5 Bantu patients. In 2 of them only morning urine could be obtained; in the remaining 3 it was possible to analyse complete 24-hour specimens and to carry out liver function tests. The results on these 3 patients were compared with the results found on 5 porphyria patients and are given in Table VII. The results on the 2 morning urines are given in Table VI.

The excretion of uroporphyrin in the porphyria patients varied from 605 to 2,800 μg. in 24 hours or 405 - 2,900 μg. per g. of creatinine. In the 3 non-porphyric patients it varied from 290 to 930 μg. in 24 hours or 240 - 930 μg. per g. of creatinine. A value within this range, i.e. 665 μg. per g. of creatinine, was also found in one of the patients where only morning urine could be obtained.

It is important to note that the excretion of uroporphyrin in the non-porphyric Bantu can be higher than the excretion of coproporphyrin. In the few patients examined, 1,000 μg. or more of uroporphyrin per 24 hours or per g. of creatinine were excreted in cases of porphyria and less than 1,000 μg. in the non-porphyric cases.

These 5 cases in which uroporphyrin was found showed no clinical signs of porphyria. In neither these nor the porphyria cases was porphobilinogen detected in the urine.

There was a marked difference as regards urobilinogen excretion in this non-porphyric group and the previous group in which only coproporphyrin excretion in urine was increased. Urobilinogenuria apparently parallels coproporphyrinuria and not uroporphyrinuria; normal excretion of urobilinogen may be accompanied by a marked increase in uroporphyrin excretion.

Abnormal liver function tests were obtained in the porphyric as well as the non-porphyric patients. It can therefore be assumed that impaired liver function probably contributes to the excessive porphyrin excretion in Bantu porphyrics.

According to these results those Bantus who excreted uroporphyrin may be grouped between those who showed excessive coproporphyrinuria and those who had porphyria. It is difficult to explain the metabolic relationships, but this group may be regarded as a transition stage between pathological porphyrinuria and porphyria. As in the case of copro-

TABLE IV. PORPHYRINS IN URINE AND FAECES AND LIVER FUNCTION TESTS IN EUROPEAN PATIENTS

	Urine						*Faeces*					
Patient	*Volume*	*Creatinine (g./24 hrs.)*	*Coproporphyrin (μg./24 hrs.)*	*Coproporphyrin (μg./μg. creatinine)*	*Urobilinogen (mg./24 hrs.)*	*Urobilinogen (mg./g. creatinine)*	*Coproporphyrin (μg./g. dry weight)*	*Protoporphyrin (μg./g. dry weight)*	*Total Porphyrin (μg./g. dry weight)*	*Urine-Faeces Porphyrin Ratio*	*O-Tolidine Reaction*	*Amidopyrin Reaction*
25	980	1·7	26	15	0·8	0·5	10	40	50	1 : 3	4+	2+
26	1900	1·6	28	17	0·6	0·4	15	20	35	1 : 2	4+	2+
27	1200	0·79	25	31	0·6	0·8	12	26	38	1 : 1	3+	+
28	2270	1·1	40	36	1·3	1·2	10	15	25	1·5 : 1	3+	+
29	2579	1·1	45	41	1·3	1·2	10	31	41	1 : 1	4+	2+
30	1850	1·2	53	44	0·5	0·4	6	31	37	1 : 1	4+	2+
31	1820	1·1	99	90	0·2	0·1	11	53	64	1·5 : 1	3+	+
32	1160	1·3	77	60	0·3	0·23	2	10	12	5 : 1	4+	2+
33	2160	0·8	76	95	3·1	3·9	9	9	18	5·5 : 1	4+	2+
34	1750	1·3	186	143	6·2	4·8	1	6	7	18 : 1	2+	—
35	720	0·6	112	187	0·4	0·6	14	49	63	3 : 1	4+	2+

TABLE IV (*Cont.*) LIVER FUNCTION TESTS

Patient	*Thymol Turbidity*	*Thymol Flocculation Units*	*Colloidal-red Test*	*Cephalin-Cholesterol Flocculation*	*Takata-Ara Reaction*	*Zinc-sulphate Turbidity units*	*Alkaline Phosphatase Activity units*	*Van den Bergh Reaction*	*Bilirubin (Direct) mg.%*	*Bilirubin (total) mg.%*	*Total Protein g.%*	*Albumin g.%*	*Globulin g.%*	*Gamma Globulin g.%*	*Cholinesterase Activity %*
25	2·5	—	—	—	—	10·6	5·1	—	0·2	0·5	7·6	3·7	3·9	1·02	100
26	3·5	—	—	2+	—	15·0	12·8	—	0·2	0·5	7·3	3·9	3·4	1·27	100
27	3·5	3+	3+	—	—	17·8	10·5	—	0·2	0·6	6·6	3·6	3·0	1·27	73
28	1·5	—	—	—	—	14·0	6·4	—	0·2	0·5	7·5	4·2	3·3	1·27	100
29	2·0	—	+	2+	—	13·3	5·7	—	0·2	0·6	7·4	4·1	3·3	1·27	100
30	2·0	—	—	—	—	9·8	4·6	—	0·2	0·5	7·0	3·9	3·1	0·96	100
31	1·0	—	—	2+	—	10·6	10·8	—	0·2	0·5	6·4	3·3	3·1	1·21	73
32	3·0	—	—	+	—	13·8	10·4	—	0·2	0·5	6·9	3·0	3·9	1·02	100
33	5·5	3+	4+	4+	++	32·2	16·9	—	0·2	0·5	6·3	2·5	3·8	2·57	37
34	5·5	4+	4+	—	—	19·6	25·6	*	0·5	1·5	7·0	3·6	3·4	1·34	68
35	2·5	—	3+	2+	—	9·0	9·5	*	0·4	1·1	6·6	4·1	2·5	0·78	78

* Delayed direct Van den Berg reaction.

porphyrinuria, the excretion of uroporphyrin can also vary from day to day (see Table VI).

Very little is known of the biochemical abnormalities in acute porphyria and in the cutanea tarda type; apparently these diseases are not caused by abnormalities of the erythropoietic system.[63-69] Acute porphyria is characterized by the presence of porphobilinogen, especially in the liver, the organ which is apparently responsible for the biochemical abnormality.[70-72] The conversion of porphobilinogen to porphyrin in the liver may be blocked, as is evidenced by a decrease in liver catalase activity in experimental porphyria which corresponds well to the acute hepatic type in the human.[73, 74] It is also possible that excessive production of porphobilinogen and porphyrin takes place in the liver.[71, 72]

Taking the above findings into consideration, the excessive excretion of uroporphyrin in non-porphyric Bantus may be explained in a similar way. Liver function is probably impaired to such an extent that catabolism of uroporphyrin

TABLE V. PORPHYRINS IN URINE AND FAECES AND LIVER FUNCTION TESTS IN BANTU PATIENTS

	Urine						*Faeces*					
Patients	*Volume*	*Creatinine (g./24 hrs.)*	*Coproporphyrin (μg./24 hrs.)*	*Coproporphyrin (μg./g. creatinine)*	*Urobilinogen (mg./24 hrs.)*	*Urobilinogen (mg./24 hrs.)*	*Coproporphyrin (μg./g. dry weight)*	*Protoporphyrin (μg./g. dry weight)*	*Total Porphyrin (μg./g. dry weight)*	*Urine-Faeces Porphyrin Ratio*	*O-Tolidine Reaction*	*Amidopyrin Reaction*
36	1080	1·3	7	5	0·63	0·49	3	3	6	1 : 1·2	3+	+
37	2100	0·9	12	13	0·11	0·12	2	3	5	2·5 : 1	—	—
38	1600	1·1	20	18	0·06	0·05	4	8	12	1·5 : 1	—	—
39	353	0·46	9	19	0·04	0·08	6	11	17	1 : 1	2+	—
40	2460	1·1	27	24	0·15	0·14	6	6	12	2 : 1	2+	—
41	1240	1·04	26	25	0·41	0·39	18	93	111	1 : 4·4	2+	—
42	870	0·6	37	62	0·2	0·3	7	35	42	1 : 5·1	3+	+
43	1220	1·02	65	64	1·35	1·32	5	12	17	4 : 1	3+	+
44	920	0·83	61	74	5·2	6·3	24	19	43	1·7 : 1	3+	2+
45	470	0·24	19	80	0·03	0·12	6	12	18	4·5 : 1	3+	+
46	1460	1·4	147	105	0·60	0·5	13	14	27	4 : 1	4+	3+
47	1610	0·73	103	142	5·30	7·3						
48	2100	0·885	138	156	3·56	4·02	4	22	26	6 : 1	—	—
49	1480	1·2	188	157	21·0	18·0	4	9	13	12 : 1	3+	+
50	930	0·93	156	168	0·15	0·16	11	13	24	7 : 1	+	—
51	2100	1·3	241	185	0·45	0·34	0·7	2	2·7	68 : 1	2+	+
52	1010	0·93	186	209	47·0	50·5	26	17	43	4·7 : 1	2+	—
53	1200	1·0	320	320	3·5	3·5	36	57	93	3·4 : 1	4+	3+

TABLE V (*Cont.*). LIVER FUNCTION TESTS

Patient	*Thymol Turbidity units*	*Thymol Flocculation*	*Colloidal-red Test*	*Cephalin-Cholesterol Flocculation*	*Takata-Ara Reaction*	*Zinc-sulphate Turbidity units*	*Alkaline Phosphatase Activity units*	*Van den Bergh Reaction*	*Bilirubin (direct) mg.%*	*Bilirubin (total) mg.%*	*Total Protein g.%*	*Albumin g.%*	*Globulin g.%*	*Gamma Globulin g.%*	*Cholinesterase Activity %*
36	1·5	—	—	—	—	12·4	9·5	—	0·4	0·8	7·6	3·8	3·6	1·68	100
37	3·0	—	+	—	+	17·8	26·3	—	0·2	0·4	7·4	3·6	3·8	1·68	100
38	3·0	—	+	—	—	14·0	9·5	—	0·2	0·4	7·1	3·5	3·6	1·27	53
39	3·5	+	2+	—	++	28·8	12·1	—	0·2	0·4	8·9	3·9	5·0	2·44	83
40	4·5	2+	4+	—	++	26·8	9·8	—	0·2	0·4	7·9	3·8	4·1	2·20	75
41	6·0	4+	4+	—	+++	71·6	5·4	—	0·2	0·4	7·6	1·5	6·1	4·50	52
42															
43	3·5	—	4+	—	+++	30·0	6·8	—	0·2	0·5	7·0	2·3	4·7	2·68	69
44	4·5	4+	4+	—	+++	39·4	8·0	—	0·2	0·4	7·5	2·3	5·2	3·12	34
45	2·0	—	—		++	20·6	13·5	—	0·2	0·4	5·8	2·4	3·4	1·82	27
46															
47	6·0	3+	4+	++	+++	34·6	12·1	—	0·2	0·4	6·6	2·8	3·8	2·06	51
48	8·0	3+	4+	++++	+++	47·4	8·8	—	0·2	0·4	7·3	2·2	5·1	4·60	11
49	4·0	4+	4+	++++	++	32·2	11·3	—	0·2	0·5	8·7	2·7	6·0	2·68	21
50	7·5	4+	4+	++++	+++	34·8	7·1	—	0·2	0·5	7·6	1·8	5·8	3·00	53
51	4·5	—	—	+++	+++	32·2	91·5	*	11·8	21·6	6·5	1·4	5·1	2·84	15
52	9·5	4+	4+	—			15·9		5·3	11·6	8·2				100
53	7·5	2+	4+	+++	+++	69·2	8·7	—	0·2	0·7	7·4	1·6	5·8	5·8	27

* Prompt direct.

TABLE VI. EXCRETION OF UROPORPHYRIN IN MORNING URINE OF TWO BANTU PATIENTS

Patient	Date	Volume (ml.)	Creatinine (μg.)	Coproporphyrin (μg.g volume)	Coproporphyrin (μg./g. creatinine)	Uroporphyrin (μg./vol.)	Uroporphyrin (μg./g. creatinine)	Total Porphyrin (μg./vol.)	Urobilinogen (mg./vol.)	Urobilinogen (mg./g. creatinine)	
54	18·3	160	89	14	155	3	38	17	193		
	21·3	250	105	13	123	—	—	13	123		
	25·3	250	120	16	129	7	59	23	188		
	28·3	170	80	11	133	3	35	14	168	1·00	12·00
	1·4	256	200	26	132	—	—	26	132	0·28	1·40
55	18·3	240	120	16	133	80	665	96	698		
	1·4	200	80	3	40	29	362	32	402	0·04	0·45

is blocked, with the result that it is excreted in the urine (abnormal enzyme systems may be the cause), or excessive production of porphyrin (and porphobilinogen) may take place in the damaged liver tissue. It is not known at present whether the biochemical defect in these patients is of such a nature that the condition is really one of latent porphyria which will later on develop into true porphyria.

SUMMARY

Since impaired liver function as well as increased excretion of urinary porphyrins are common findings in the Bantu, an attempt was made to correlate certain biochemical liver function tests with porphyrin metabolism. The results suggest a definite positive correlation.

Our thanks are due to Dr. K. J. Keeley, of the Baragwanath Hospital, who provided the clinical material and without whose help this paper would not have been possible, and to the Director of the South African Institute for Medical Research for his interest in this study.

TABLE VII. EXCRETION OF UROPORPHYRIN AND LIVER FUNCTION TESTS IN 3 NON-PORPHYRIC (NOS. 61-63) AND 5 PORPHYRIC (NOS. 56-60) CASES

Patient	Volume	Creatinine (g./24 hrs.)	Coproporphyrin (μg./24 hrs.)	Coproporphyrin (μg./g. creatinine)	Uroporphyrin (μg./24 hours.)	Uroporphyrin (μg./g. creatinine)	Total Porphyrin (μg./24 hrs.)	Total Porphyrin (μg./g. creatinine)	Urobilinogen (mg./24 hrs.)	Urobilinogen (mg./g. creatinine)
56	1800	1·5	580	385	605	405	1185	790	1·37	1·0
57	2540	0·76	520	680	920	1200	1440	1880	1·28	1·68
58	1040	0·90	880	970	1350	1490	2230	2460	5·05	5·58
59	2240	0·85	500	600	2100	2500	2600	3100	0·34	0·45
60	960	0·96	1100	1150	2800	2900	3900	4050	4·8	5·0
61	2450	1·2	165	138	290	240	455	378	0·68	0·57
62	1790	1·1	430	390	880	800	1310	1190	0·47	0·43
63	2240	1·0	484	484	930	930	1414	1414	0·07	0·07

TABLE VII (*Cont.*). LIVER FUNCTION TESTS

Patient	Thymol Turbidity units	Thymol Flocculation	Colloidal-red	Cephalin-Cholesterol Flocculation	Takata-Ara Reaction	Zinc-sulphate Turbidity units	Alkaline Phosphatase units	Van den Berg Reaction	Bilirubin (direct) mg.%	Bilirubin (total) mg.%	Total Proteins g.%	Albumin g.%	Globulin g.%	Gamma Globulin g.%	Cholinesterase Activity %
56	8·5	3+	4+	2+	+++	42·0	6·1	+	0·3	0·6	8·2	2·9	5·3	3·79	77
57	5·0	2+	2+	—	+++	22·6	12·4	+	0·2	0·2	7·7	2·4	5·3	1·82	62
58	8·0	4+	3+	—		15·8	12·4	*	0·2	0·9	7·9	3·3	4·6	1·54	15
59	7·5	2+	3+	—	+++	25·6	7·8	—	0·2	0·4	6·5	2·8	3·7	2·06	53
61	4·0	+	2+	2+	+	19·6	7·5	—	0·2	0·4	7·1	3·6	3·5	1·61	68
62	3·0	—	4+	—	+	16·8	7·4	—	0·2	0·4	6·1	3·1	3·0	1·47	66
63	5·0	—	4+	—	++	32·2	14·6	—	0·3	0·6	8·0	2·1	5·9	2·59	100

* Delayed direct.

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A STUDY OF THE EFFECT OF VITAMIN K UPON NEONATAL SURVIVAL IN AFRICAN AND INDIAN PATIENTS

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The possibility that routine intrapartum administration of vitamin K may produce a reduction in the incidence of neonatal haemorrhage has been debated for many years, and opinions remain divided. This state of uncertainty served as a stimulus to the present study, in which an attempt was made to evaluate the effects of intrapartum vitamin K among African and Indian patients.

Haemorrhagic lesions in the newborn may be due to various factors, viz. (1) Vascular lesions, traumatic or anoxic; (2) low prothrombin levels, which may be the result of insufficiency of supply or inefficiency in formation, the latter consideration being particularly important in the premature baby; (3) coagulation factors other than prothrombin; and (4) factors impairing capillary resistance. The prothrombin level, therefore, is only one of several significant factors.

The average newborn baby has a birth prothrombin level of 20–50% of the normal adult value. Thereafter there is a fall till the 3rd day to approximately 10% of the adult value, and a subsequent rapid rise till the end of the 1st week.

The maximum fall in prothrombin level occurs between the 2nd and 5th days,[1, 2] and it has been shown that the intrapartum maternal administration of vitamin K prevents this fall. While the vitamin also produces a statistically significant rise in the level at birth, this rise is but slight. The 8th-day level is likewise not appreciably affected.[1, 3, 13] Consequently, it is postulated that the birth and 8th-day values are largely determined by some factor other than vitamin K, whereas vitamin K is concerned to a large degree in the fall between the 2nd and 5th days. It follows that an improvement in the stillbirth rate in patients with normal labours and deliveries cannot be expected as a result of the administration of vitamin K.

The prothrombin level falls to an even greater extent with prolonged labour, albuminuria, placental insufficiency, and the administration of barbiturates during labour. The infants in these cases also have an abnormally low prothrombin level at birth. Intrapartum vitamin K has been shown to raise the low birth level and prevent the severe fall in the large majority of these cases.[1, 4] Thus the benefit to the neonate from intrapartum maternal injection is superior to that accruing from injection of the neonate.

Vitamin K given *intra partum* by intramuscular injection is effective, after 15 minutes, in preventing the expected fall in neonatal prothrombin level, but the mother requires a repeat injection every 24 hours until delivery.[4, 5] Bohlender, however, claims to have achieved the same effect with injection of vitamin K only 5 minutes before delivery.[6]

This theoretical basis underlies the rationale of intrapartum administration of vitamin K. A large number of investigations on this basis have produced entirely contradictory results. For example, the largest reported series are those of Dam *et al.*[1] in Scandinavia, with 33,000 cases, and Potter[5] in America, with 13,000 cases. Potter found no improvement with vitamin K administration. Dam, on the other hand, who investigated prothrombin time changes in great detail, came to the conclusion that intrapartum vitamin K lowered the number of neonatal deaths from haemorrhagic lesions. It is generally accepted, however, that the improvement is too slight to warrant the routine use of vitamin K.

In view of the fact that African and Indian patients differ markedly from the average European in the degree of malnutrition, liver damage, frequency of childbearing, and traumatic factors during labour, it was decided to investigate the position in this group of patients at the King Edward VIII Hospital, Durban.

A further reason for the investigation was our observation that, as shown by the figures here reported, the incidence of fatal haemorrhagic lesions among European babies as quoted by most authorities is less than 0·5%, whereas there is a considerably greater incidence in African and Indian patients.

THE INVESTIGATION

Vitamin K (tetrasodium 2-methyl-1, 4-naphthohydroquinone diphosphoric acid ester*), given intramuscularly in the dosage of 10 mg., was used throughout the series. It was administered by the nursing staff in the admission room of the labour theatres (labour 'wards'), as far as possible to alternate patients upon arrival. The majority received the vitamin K between ½ hour and 4 hours before delivery, a slightly smaller number between 4 and 12 hours, and very few more than 24 hours before delivery.

A total of 7,802 cases was investigated between May 1957 and March 1958. Patients delivering before admission, those with stillbirths and those with babies weighing less than 1,000 g. (2 lb. 2½ oz.) were excluded from the series.

Comparison of Groups

In Table I is shown the number in each group expressed as a percentage of the total (7,802) and classified according to parity and maturity. The groups are seen to be proportionally

TABLE I. TOTAL CONSECUTIVE VIABLE LIVEBIRTHS IN HOSPITAL (7,802)

		Received Vit. K (3,312)		*No Vit. K* (4,490)	
Primiparae	Premature	1·3%	(102)	1·8%	(143)
	Mature	10·4%	(814)	12·4%	(966)
Multiparae	Premature	2·3%	(180)	4·5%	(357)
	Mature	28·4%	(2,216)	38·7%	(3,024)

comparable, with the exception of the multiparous premature group, where there is overloading of those who did not receive vitamin K. For this reason, and because maturity is shown to be an important factor in the incidence of haemorrhagic lesions, the premature and mature groups are considered separately in the final evaluation.

In assessing a series of this nature, various other factors should be comparable, such as diet, season and manner of birth.

* Synkavit (Roche).

By far the majority of patients at the King Edward VIII Hospital are drawn from the low income group of Africans and Indians, in whom the diet is invariably—and sometimes grossly—deficient.

Certain investigators have shown that there is a seasonal variation in haemorrhagic lesions—being maximal in spring.[1, 5] The generally accepted view at present is that this is due to an alteration in capillary permeability.[7] Our series includes too few cases during autumn to evaluate this factor fully but, on the figures available, comparatively few haemorrhages occurred in midsummer, while the remainder were scattered at random, with no particular peak in spring.

It is an interesting fact that artificial feeding as opposed to breast feeding has been shown to result in only a very short and slight fall in prothrombin level, of no more than 24 hours' duration.[1] The babies in this series were almost exclusively breast-fed or fed on expressed breast milk.

In Table II is shown the manner of birth expressed as a percentage for each group, viz. those receiving vitamin K

TABLE II. COMPARISON OF MANNER OF BIRTH (% OF TOTAL IN EACH GROUP)

		Received Vit. K		*No Vit. K*	
Vertex	Premature	76·9	(216)	81·9	(410)
	Mature	89·9	(2,726)	87·3	(3,484)
Breech	Premature	14·1	(40)	9·2	(46)
	Mature	1·7	(52)	2·3	(92)
Forceps	Premature	2·1	(6)	2·6	(13)
	Mature	3·0	(92)	3·6	(144)
Caesarean section	Premature	7·1	(20)	5·8	(29)
	Mature	4·2	(128)	5·7	(229)
Symphysiotomy	Premature	0·0	(0)	0·4	(2)
	Mature	1·0	(32)	1·0	(41)

and those not receiving vitamin K, with separate consideration of premature and mature babies. It is evident that these groups are comparable apart from a small disproportion among the premature breech deliveries in favour of those who did not receive the vitamin.

In the foregoing tables it is clear that the two groups—those who received vitamin K and those who did not—are comparable, with the exception of the number of multiparous premature infants.

In Table III is shown the distribution of the neonatal deaths according to the manner of delivery, grouping the

TABLE III. DISTRIBUTION OF NEONATAL DEATHS (% OF TOTAL IN EACH GROUP)

		Received Vit. K		*No Vit. K*	
Vertex	Premature	9·9	(28)	12·8	(64)
	Mature	0·5	(15)	0·85	(34)
Breech	Premature	2·5	(7)	2·4	(12)
	Mature	0·03	(1)	0·05	(2)
Forceps	Premature	0·3	(1)	0·4	(2)
	Mature	0·29	(9)	0·20	(8)
Caesarean section	Premature	0·3	(1)	1·4	(7)
	Mature	0·03	(1)	0·13	(5)
Symphysiotomy	Premature	0·0	(0)	0·2	(1)
	Mature	0·09	(3)	0·15	(6)

cases in the same manner as in Table II. There were 207 neonatal deaths, 123 premature and 84 mature. Of these, intrapartum vitamin K had been administered in 66 and no vitamin K given in 141.

Aetiology of Neonatal Deaths

Table IV shows the effects of vitamin K on neonatal deaths of varying aetiology. It will be seen from the figures

TABLE IV. COMPARISON OF THE EFFECT OF VITAMIN K UPON THE AETIOLOGY OF 207 NEONATAL DEATHS (RATE PER THOUSAND)

Aetiology		*Received Vit. K*		*No Vit. K*	
Multiple site haemorrhage	Premature	7·09	(2)	10·0	(5)
	Mature	0·0	(0)	2·3	(9)
Intracranial haemorrhage	Premature	17·7	(5)	50·0	(25)
	Mature	3·9	(12)	4·8	(19)
Other haemorrhage	Premature	10·6	(3)	12·0	(6)
	Mature	0·33	(1)	1·8	(7)
Other causes	Premature	95·7	(27)	100·0	(50)
	Mature	5·3	(16)	5·0	(20)
Total deaths	Premature	131·2	(37)	172·0	(86)
	Mature	9·6	(29)	13·8	(55)

Total neonatal deaths, 207. Postmortems performed, 86·5% (179).

that there is virtually no difference in death rate from causes other than haemorrhagic lesions. The large majority of these cases were babies dying of asphyxia neonatorum. The difference in total death rate, therefore, is due to the haemorrhagic group, both in premature and mature infants.

The expected neonatal death rate as quoted in the literature is 19–20 per thousand.[8] In the total series here reviewed it is 26·5 per thousand.

Haemorrhagic Lesions in the Premature Group

Considering the haemorrhagic lesions as a whole in premature infants, it is clearly shown that a much higher percentage died of haemorrhage than in the mature group.

Although a large number died of intracranial haemorrhage, in many cases there was no sign of tentorial tears, and haemorrhage occurred into the pons, ventricles, subarachnoid space and medulla, and in a very few extended down the cord. These cases usually had a moderate to marked degree of atelectasis. Haemorrhage was even found occurring into the pericardial sac. These findings suggest that the initial vascular lesion in a large number was anoxic rather than traumatic. In fact, in both premature and mature babies one feels that the words 'birth trauma' slip too glibly off the tongue without sufficient account being taken of other important factors.

The difference in average weights of the babies in the group which received vitamin K and that which did not is negligible, being 3 lb. 9 oz. in those who received it, and 3 lb. 11 oz. in those who did not.

As can be seen in Table V, the calculated death rate per thousand is halved in that group in which intrapartum vitamin K was given. These figures may look impressive

TABLE V. INFLUENCE OF VITAMIN K UPON THE INCIDENCE OF HAEMORRHAGIC LESIONS (PREMATURE GROUP)

	Total Haemorrhagic Lesions	*Total Cases in Group*	*Rate per Thousand*
Received vitamin K ..	10	282	35·5
No vitamin K	36	500	72·0

$P = < \cdot 1$

enough, but when subjected to statistical analysis, the numbers are insufficiently large to render them statistically significant. Their significance is possibly further dwarfed by the decision to administer vitamin K to a number of suspect neonates after delivery. As the intrapartum administration of vitamin K shows a resultant trend towards reduction in fatal neonatal haemorrhages, and further support stems from clinical impressions which prompted the undertaking of this investigation, it would seem unjustified to withhold its administration.

Haemorrhagic Lesions in the Mature Group

In the mature group it is again seen that the death rate is halved in those who received vitamin K (Table VI). These

TABLE VI. INFLUENCE OF VITAMIN K UPON THE INCIDENCE OF HAEMORRHAGIC LESIONS (MATURE GROUP)

	Total Haemorrhagic Lesions	*Total Cases in Group*	*Rate per Thousand*
Received vitamin K ..	13	3,030	4·3
No vitamin K	35	3,990	8·8

$P = < \cdot 02$

figures are statistically significant. As was seen above, the greatest disparity exists in the number of multiple-site haemorrhages—in some cases unassociated with intracranial haemorrhage—of which some were true haemorrhagic disease of the newborn.

There is a steep rise in death rate among those babies whose mothers received vitamin K more than 24 hours before delivery, presumably due to the increased hazards of prolonged labour, and perhaps also due in part to the falling efficacy of vitamin K. To achieve the optimum effect of vitamin K, patients should receive a repeat dose within 24 hours.

Complications of Vitamin-K Administration

Several investigators have reported a relationship between high doses of vitamin K and kernicterus.[9] Bound and Telfer,[10] for instance, in a series of 55 premature infants receiving 10 mg. on 3 successive days, report an average serum-bilirubin level of 15·4 mg.%; 38% of their infants had serum-bilirubin levels above their kernicterus level of 18 mg. and 2 died of kernicterus.[10] This result is borne out by Laurance,[11] and Meyer and Angus.[12]

In our series of cases, there were no deaths from kernicterus, though one baby developed the condition and subsequently recovered. Vitamin K had not been administered in this particular case. In this series, therefore, the dose administered did not have an adverse effect on the babies, though it may be higher than is necessary. It has been proved that a dosage of 2 μg. to the babies at birth is sufficient to prevent the 2nd to 5th day fall in prothrombin level.[1]

CONCLUSION

The results of this investigation permit the statement that routine intrapartum administration of vitamin K has therapeutic value in the prevention of fatal haemorrhagic lesions in newborn African and Indian babies.

SUMMARY

1. Fatal haemorrhagic lesions in the African and Indian neonate occur frequently—apparently more frequently than in Europeans.

2. In mature babies, it is clear from our figures that a significant reduction in these haemorrhagic lesions occurs when routine intrapartum vitamin K is given.

3. In premature babies, there is a similar trend—although our figures are insufficient to be statistically significant.

4. Routine intrapartum administration of vitamin K has therapeutic value in the prevention of fatal haemorrhagic lesions in newborn African and Indian babies.

OPSOMMING

Hier word 'n ondersoek beskryf wat in King Edward VIII-Hospitaal onderneem is om te probeer vasstel hoe waardevol die toediening van vitamine K is gedurende kraam om dodelike bloedings by Naturelle- en Indiër-pasgeborenes te voorkom.

Wat voltydse babas betref, toon ons syfers aan dat daar bepaald 'n betekenisvolle vermindering is van bloedende letsels wanneer vitamine K as roetine gedurende kraam toegedien word.

In die geval van vroeggebore babas is daar 'n soortgelyke strekking.

Wat Naturelle- en Indiërpasiënte betref, dui die getuienis dus aan dat die roetine-toediening van vitamine K gedurende kraam bepaalde terapeutiese waarde het by die voorkoming van dodelike bloedende letsels by pasgeborenes.

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SOUTH AFRICAN MEDICAL AND DENTAL COUNCIL : SUID-AFRIKAANSE GENEESKUNDIGE EN TANDHEELKUNDIGE RAAD

The 70th meeting of the South African Medical and Dental Council was held in the Board Room, Deal's Hotel, East London, C.P., on 23-26 September 1959. The proceedings occupied 8 half-day sessions. Thirty members were present, including the President (Prof. S. F. Oosthuizen) in the chair, the Vice-president (Prof. H. W. Snyman), and the Treasurer (Dr. R. V. Bird), together with the Registrar (Mr. W. H. Barnard).

PRESIDENT'S OPENING REMARKS

After speaking in suitable terms of the death of Dr. J. N. W. Loubser, a member of the Council until last year, the President referred to the great amount of work accomplished by members of the various committees between meetings of the Council. A favourable atmosphere for the Council's work resulted from the good relations that were maintained with the Department of Health, the Universities, other statutory bodies such as the Nursing Council and the Pharmacy Board, professional bodies such as the Medical and Dental Associations, and the different voluntary aid organizations.

The Council, Prof. Oosthuizen said, had to deal mainly with 3 categories of problems, viz. (*a*) those that clearly fall within its purview, (*b*) those that do not, and (*c*) those about which there is some doubt and difference of opinion. He dealt briefly with the following matters in the *first category:*

1. *Artificial human insemination.* The Minister of Health has informed us that he is not proposing to appoint a Commission, but that he welcomes the Council's offer to obtain information for him. The Council is now cooperating with the Secretary for Health on the matter.

2. *Amendment of section 34* (illegal practice of medicine). Following representations from the Council, the Minister has asked for a memorandum. This I am drafting, but its completion must await the advice and comments of the Medical and Dental Associations and other bodies. Amongst other information, we have received from an eminent Cape Town surgeon a fine report complete with case histories.

3. *Proposed amendment of the Act to validate rule 6* (informal proceedings on receipt of complaints of unethical conduct). There are many senior members who wish the Council to have the specific power to deal with certain types of complaint by procedures short of a full enquiry. The question was recently raised again in an interview I had with the Attorney General of the Transvaal. The Executive Committee is reporting on it to the Council.

4. *Rule 19* (advertising of professional appointments). The Executive Committee has carried out the Council's instructions, including an interview with the Medical Association, and is reporting on the subject at this meeting.

5. *Registration of specialists and conditions of practice.* This very important matter has been brought to finality by the *ad hoc* Committee, whose recommendations are before this meeting.

6. *Registration of optometrists.* After many years of negotiation, good progress towards a compromise was made at a recent meeting with representatives of the Medical Association and the South African Optical Association. The Federal Council of the Medical Association has the matter under consideration. A report is before this meeting.

7. *Registration of doctors from abroad.* At its last meeting the Council agreed to certain principles contained in my report. The Executive Committee has now drafted the necessary amendments to the Act and regulations and these will be before this meeting for submission to the Minister.

8. *Proposed Council building.* After considerable investigation and discussion, the *ad hoc* Committee recommends the Council not to proceed with the erection of its own building at this stage.

9. *Medical technologists.* A conference of interested persons was recently held and recommendations are made to the Council about the proposed training of this class of auxiliaries. The training will be brought in line with the pattern of the Civil Service Commission.

10. *Disciplinary matters.* The Council's committees have dealt with a number of disciplinary cases, and I am glad to announce that the findings in all the cases have been accepted without any application to the Supreme Court for a review.

11. *Diverse.* (*a*) The finances of the Council are sound and its work has not suffered through lack of funds. (*b*) There is a steady

growth of persons on our Registers, compulsory as well as voluntary. (*c*) The training of interns and the recognition of hospitals for this purpose have been put on a sound basis, and it is possible that future inspections may well be dispensed with. (*d*) On the educational and specialistic fronts there has been satisfactory activity, as reflected in the reports. (*e*) The salaries of the Council's staff, up to a certain level, have been consolidated.

Dealing with the *second category*, the President said, it happens with monotonous frequency that enquirers are amazed to hear that the matters about which they wrote are deemed to fall outside the Council's purview. One reason is that the public is of the opinion that this Council is the parliament of doctors, that it was established by Parliament as the watch-dog of the public, and that the Act makes it incumbent upon the Council to report to the Minister any matter of public importance. However interested members may be, the Council as a statutory body cannot deal with certain matters; nevertheless every effort is made to assist *bona fide* enquirers.

To quote an example: The Atomic Energy Board recently asked the Council to publicize the provisions of the new Act as they relate to the use of radium and radio-active isotopes by practitioners. This is not a function of the Council, but the offer of my services for consultation and assistance was made to the Board—and accepted with appreciation. Who can possibly not be interested in these atomic developments, in which not only doctors and their staff working with radiations, but the whole community may be at hazard? The same remarks apply when the Council is asked to accept official representation on diverse outside committees of enquiry.

To quote another example: *Prima facie* what could be more reasonable than the oft-expressed view that the Medical Council should bring pressure to bear on those who are responsible for road safety? But we are powerless to deal officially with such matters.

In the *last category* (matters in which there is doubt about the status of the Council) falls the vexed question of *negligence*, when complaints are lodged against practitioners by the public or from the Courts. Some members hold that negligence, where possible, should be dealt with in the law courts, while others believe that negligence may constitute improper or disgraceful conduct in a professional sense and that the Council is therefore the correct body to enquire into complaints of negligence. The public argues: 'A person is brought before a court of law for negligent driving and fined if guilty, whereas a doctor may through negligence endanger a patient's life and yet escape disciplinary action.'

The President then discussed the findings of the Courts on the difficult question of the meaning of 'negligence' on the part of a practising doctor, and concluded: 'I think it would be wrong for the Council to regard negligence as something which falls outside its purview; it would be equally wrong to evolve a policy that every complaint of negligence should be dealt with by the Council. In my opinion there is no ready answer, no ready solution, for a thorny problem, and the Council must decide each case on its merits, having regard to all the circumstances of the case.'

'And so one can continue to deliberate on the important problems with which this Council has to deal. The diversity of problems which face us as a kaleidoscope of ever-changing events form the basis for the constant intellectual adventure to which we are subjected. I am grateful for these problems because they prevent us from becoming drowsy with the dreams of mediocrity.'

REGISTRATION OF SPECIALISTS AND CONDITIONS GOVERNING THE PRACTICE OF SPECIALISTS

Since 1954, when Act 29 of 1954 validated the registration of specialities (which had that year been declared invalid by the Supreme Court), the Council and its committees have been engaged in framing 'rules governing the registration of specialities of medical practitioners and dentists, ... and the conditions which shall govern the practice of medical practitioners and dentists whose specialities have been registered'. At the present meeting the framing of these rules was brought to finality, when the Council received and considered the draft submitted by its *ad hoc* Committee and, after making certain final amendments, adopted the rules for approval and promulgation by the Minister of Health.

The portion of these rules which is concerned with registration (rules 1–7) is mainly on similar lines to the rules now in force. At the present meeting, on the recommendation of its Specialist Committee (Medical), the Council added a note to rule 5(*d*) to the effect that experience in hospital during the first 2 years after qualification will not count towards the requirements under rule 5(*d*)—i.e. the stipulated 3 years of specialist experience. A motion by Dr. J. K. Bremer was also accepted in principle to the effect that rule 5(*c*) should be modified so that persons undertaking other training in lieu of general practice must obtain at least 1 year's experience in general medicine and/or general surgery and/or general practice (practitioners who are training in pathology being exempt from this requirement); also that a note should be added stating that training at a hospital or institution of less than 3 months' duration would not count except where a lesser period is needed to complete the prescribed 24 months' experience.

The portion of the rules which prescribes the conditions governing the practice of specialists (rules 8–14) are mainly new. This portion includes the following provisions:

A specialist must confine his practice to his speciality.

A specialist must not practice in partnership with a general practitioner or a specialist practising some other speciality.

A specialist must not take over a patient from another practitioner except with the consent of the practitioner concerned, which is not to be unreasonably withheld.

A specialist must not do domiciliary visiting except when requested to do so by, or with the consent of, a general practitioner.

A specialist may treat any person coming to him direct for consultation.

A specialist who is consulted by a patient or who treats a patient must take all reasonable steps to ensure the collaboration of the patient's general medical practitioner or dentist (meaning general dental practitioner) as the case may be.

(A note is added providing that nothing in these rules is to interfere with the ethical standards relating to emergency.)

ETHICAL RULES 19 AND 19(BIS), CONCERNING THE ADVERTISING OF PROFESSIONAL APPOINTMENTS

The Council had before it a report of the meeting held on 11 July 1959, when a deputation from the Federal Council of the Medical Association met the Council's Executive Committee and discussed problems relating to ethical rule 19 (and 19 *bis*, *ter* and *quat.*). The Executive Committee had considered this report and now reported to the Council as follows:

The Medical Association was in favour of rules 19 and 19(*bis*) as amended by the Council at its meetings in September 1958 and March 1959 and in the form in which they are to be submitted for promulgation after the present meeting of the Council.

The Medical Association supported the Council in its decision not to proceed with rule 19(*ter*).

As regards the temporary appointment of a locum tenens—previously rule 19(*quat.*), 1(*a*)—the Council, at the present meeting, decided that the previous draft should be amended to read: 'The temporary appointment of a medical practitioner or dentist as a locum tenens for a period not exceeding 6 months shall be exempted from the requirements of the rule'; and that this be inserted as a note under rule 19 and under rule 19(*bis*).

As regards transfers or promotions within a service—previously rule 19(*quat.*), 1(*b*)—the Council resolved that the following be inserted as a note under rule 19(*bis*): 'Transfers or promotions will not be regarded as new appointments and such positions need not be re-advertised'. (The Medical Association is not in favour of this exemption.)

After debate the Council resolved that rules 19 and 19(*bis*), as amended, be approved and submitted to the Minister for approval and promulgation.*

REGISTRATION OF OPTOMETRISTS

In pursuance of negotiations between the Medical Association of South Africa and the South African Optical Association a conference had been held in Johannesburg on 4 July 1959 under the chairmanship of Prof. Oosthuizen, attended by representatives of these two bodies and of the Council. The object was to reach a compromise between the two bodies, for which the Council would accept responsibility. The main obstacle to agreement, the chairman said at the conference, was the present rule of the Council relating to the examination of, and supply of glasses to, children under 15 years old. Both bodies, he said, as well as the public, would gain if a compromise were reached. It was the policy of the Council that registration of all the categories of supplementary health services should be made compulsory, and that all medical services should be coordinated under the one Council.

* The draft to be submitted to the Minister is set out on page 954.

The following matters of principle were agreed upon by the Conference:

The present rule (1) of the Council's rules, under which registered optometrists may carry on their calling, states that they shall not examine and supply with glasses any person in whom pathological conditions should be suspected, or children under 15 years of age, but shall refer such cases to a registered medical practitioner. On this it was agreed that new regulations should be framed providing (*a*) that cases in which pathological conditions are suspected shall be referred to a medical practitioner, and in such a manner as will not affect the dignity of either party, and (*b*) that a registered optometrist shall be allowed to see and examine children of any age, but that all cases of children up to 8 years old shall be referred to a medical practitioner, subject to certain exceptions to be defined, and that, with regard to children aged 8–15 years, certain cases, to be defined, *shall* be referred to a medical practitioner (but the South African Optical Association will recommend that all cases of this age should be so referred).

In regard to the present rule 3, which lays down certain restrictions on advertising by registered optometrists, it was agreed that this rule should be amended to provide for a gradual imposition of restrictions in a manner that would not be prejudicial to members of the South African Optical Association under their existing code of ethics.

These agreements are to be regarded as tentative.

The position of persons practising as optometrists but not satisfying the rules was discussed. The chairman explained that the passing of the Council's examinations would confer the right to voluntary registration under the present rules. Under compulsory registration a similar test would be available, but the standard of a test arising out of legislation that would make the registration of optometrists compulsory would not be too high, for it was an accepted principle of law that one could not in an enactment of this nature arbitrarily deprive a person of the means of earning his livelihood.

At the present meeting of the Council this report of the Conference was considered, as well as reports of previous conferences and correspondence. Prof. Oosthuizen was congratulated on the successful outcome of the Conference under his chairmanship. The Council resolved to refer the matter to its Executive Committee with instructions to consider advice from a committee to be set up consisting of 2 members of the Council (Drs. A. W. S. Sichel and Prof. E. H. Cluver), 2 from the Medical Association of South Africa, and 2 from the South African Optical Association.

PROPOSED LEGISLATION ENABLING QUALIFIED PERSONS FROM ABROAD TO TAKE UP INTERN OR POSTGRADUATE POSTS IN SOUTH AFRICA

The Council considered draft amendments of sections 22, 23 and 24 of Act 13 of 1928 and of the regulations made thereunder (Govt. Notice 256 of 1947 as amended). These amendments had been drafted by the Registrar in pursuance of a memorandum, dated 21 November 1958, by the President (Prof. Oosthuizen), the principles in which had been adopted at the previous meeting of the Council (March 1958). The object of the amendments was 'to extend to medical practitioners or interns from foreign countries the facilities which those countries had been extending to our graduates for many years, viz. to come to this country for postgraduate study and hold paid appointments, or for the doing of their internships as the holders of paid appointments . . .' Prof. Oosthuizen had recorded in his memorandum: ' . . . Intellectual contact on the international level is an enriching experience, not only to the receiver but also to the giver. And if the contact were between men trained in the disciplines of medicine, obviously each would have something relating to these disciplines to teach the other, but the enrichment for both would go beyond these disciplines into other intellectual and cultural spheres. The phenomenon of insularity on the intellectual and scientific level is always an incongruous one in an adult society, more especially so in the age in which we live and where advances in the means of communication, both intellectual and physical, have shrunk the geographical frontiers of our planet so considerably.'

The Council resolved to refer the proposals to the Minister with a request that the Act and regulations be amended accordingly.

Restrictions Remaining on Persons Exempted by the Minister under Section 74(b) of Act 13 of 1928 from the Registration Requirements of the Act

A discussion took place on the rights conferred and restrictions imposed on exempted persons. The section enacts that the Minister, after consulting the Council, may grant such exemption for a limited period to persons from other countries engaged in South Africa (1) solely in medical and pharmaceutical research work, or (2) in postgraduate work under the control or direction of a university possessing a faculty of medicine, or (3) in demonstrating medical, surgical, dental or pharmaceutical techniques to persons registered under Act 13 of 1928. It is held that this exemption applies only for these specific purposes and that it does not cover consultations or the seeing and treating of patients; this the exempted person remains precluded by law from undertaking. (The Act includes provision for the registration for not more than 30 days of a person coming to the Union at the request of a registered medical practitioner for the purpose of examining or treating an individual patient. Such registration covers only the examination or treatment of the particular patient or patients whom the Council has authorized the visiting practitioner to examine or treat.)

It is regarded as incumbent on practitioners in the Union not to invite any visiting practitioner exempted under section 74(*b*) to see or treat a patient or engage in consultation.

VALIDATION OF RULE 6 (INFORMAL PROCEEDINGS ON RECEIPT OF COMPLAINTS OF UNETHICAL CONDUCT)

Consideration was given to the disadvantage that arises from the fact that when a complaint is received against a registered practitioner the Council, after giving the practitioner the opportunity of submitting his comments in writing, must decide either to hold a formal 'enquiry' or to take no further action. The Act does not enable the Council to take any other line of action. Departures from the sound traditions of the profession sometimes occur which *prima facie* do not amount to 'improper or disgraceful conduct'; and in such cases it is unfortunate that no suitable action can be taken. This matter has been under consideration for some years; indeed regulation 6 of the Regulations for the Conduct of Enquiries was designed to make provision for such cases. Regulation 6, however, has been found to be *ultra vires*, and the proposal which the Executive Committee submitted at this meeting was that an amendment of Act 13 of 1928 should be sought which would confer on the Council the powers that regulation 6 purported to confer. Regulation 6 is in the following terms:

'6. Should the executive committee resolve that the complaint, even if substantiated, would not constitute improper or disgraceful conduct, . . . or for any other reason should be withheld from enquiry, it shall take such action as it shall think fit and report such action and the grounds therefor to the Council.'

The proposal before the Council was to recommend to the Minister that section 41 of the principal Act be amended by the addition of the following subsections:

'2. If the council, or any committee to which the necessary powers under this Chapter have been delegated by the council in terms of section 7, resolve that any such complaint, charge or allegation, even if substantiated, would not constitute improper or disgraceful conduct, or conduct which when regard is had to the profession or calling of the person against whom such complaint, charge or allegation is made is improper or disgraceful, or for any other reason should not be the subject of an enquiry under sub-section (1), it shall take such action as it may deem appropriate in the interest of the public or of the profession of medicine or dentistry, as the case may be, and the provisions of paragraph (*b*), sub-section (3) of section 42 shall apply should it require any person to appear before it in connection with such complaint, charge or allegation; and

'(3) Any committee as aforesaid shall furnish the council with a report on any action taken by it in pursuance of the provisions of sub-section (2).'

After debate the proposal was carried.

Regulations for the Conduct of Enquiries

Amendments to the regulations were debated to make it possible for evidence in regard to previous convictions of an accused person to be placed before the Council or the committee holding

an enquiry. After debate, the regulations were adopted for submission to the Minister for approval and promulgation.

FACILITIES FOR TREATMENT OF MENTAL ILL-HEALTH

At its meeting in March 1959 the Council resolved to draw the attention of the Minister to the insufficiency of modern facilities in the treatment of those suffering from mental ill-health. In his reply the Minister referred to the shortage of psychiatrists and trained nursing personnel, which was world-wide. He went on to say, 'As a result of research and modern methods of treatment it is felt that some modification of our Mental Disorders Act needs serious consideration, so as to facilitate the early treatment of psychosomatic, neurotic and early psychotic conditions, at clinics, general hospitals and nursing homes, without the cumbersome procedure of certification as is required at present. This will, I hope, partially overcome the ever-present prejudice the layman or general public manifests against the so-called stigma attached to any form of mental illness. Legislation of this nature is already under way in the UK to overcome similar difficulties . . . '.

The question was again discussed at the present meeting, and stress was laid on the shortage of accommodation in the mental hospitals. Dr. B. P. Pienaar, Commissioner for Mental Health, said that in this country we were not lagging behind in treatment. Our Mental Disorders Act compared most favourably with those of other countries, and there was no legal bar to the provision of treatment centres and homes by provincial administrations or municipalities or to mental treatment in general hospitals (if staff was available). Miss C. A. Nothard said that the shortage in mental nurses was largely due to the fact that the girls' parents feel that there is a stigma in mental nursing. The Nursing Association had repeatedly urged that non-Europeans should be trained as mental nurses.

After further debate the Council passed the following resolution: '. . . While appreciating the efforts of the Department of Health the Council wishes to express the opinion that the Department should be furnished with the finances and facilities to take active steps to educate the public in a proper appreciation of mental health, and that as a first step the Minister be urged to make a liberal contribution to the production of the blue-print of the South African Council for Mental Health for the World Health Year 1960 at present being organized by the World Federation of Mental Health'.

SURGICAL

Assistants at Operations

Arising out of the question of assistants at operations conducted under local anaesthesia, Dr. H. Grant-Whyte and Dr. P. F. H. Wagner had been asked to submit memoranda, and in doing so to give consideration to operations conducted under spinal anaesthesia. On receipt of these memoranda the subject had been given further consideration by the Executive Committee, who recommended that a new paragraph be added to the statement of policy laid down by the Council. This recommendation was now adopted by the Council, so that the revised statement of policy reads as follows (additional paragraph in italics):

'Although in many instances surgeons have developed techniques whereby assistants at operations seem to be unnecessary, the Council is informed that the general opinion in surgery is that assistants should be present at operations of a certain magnitude, e.g. an appendectomy, or where difficulties or complications might occur or are anticipated. The Council finds itself in agreement with this view. In addition, it is necessary that a medical practitioner should be present for the purpose of administering the anaesthetic.

'*In elective surgery where general, spinal or caudal anaesthesia is to be used, an additional medical practitioner must be present to attend to the patient in order to safeguard the patient against possible complications.*

'A registered nurse may not act in place of an assistant surgeon at an operation. In the case of emergencies a qualified nurse may assist, or even administer the anaesthetic, but should she do so she is required by the South African Nursing Council to report the facts to that Council.'

Suggested Fact-finding Committee

Dr. R. L. Impey moved 'that a fact-finding committee be appointed to enquire whether, under existing circumstances, the manifold benefits of first-class modern surgery are generally available to the public of South Africa.' The discussion centred mainly on the surgery practised in the smaller towns, on which conflicting views were expressed by different speakers, and the Council adopted a resolution to refer this motion to its Executive Committee to consider and report on the practicability and feasibility of the fact-finding committee envisaged.

The 'Kux' Operation (vagotomy and sympathectomy)

The Council's Executive Committee had had under consideration the kind of publicity that had been given to this operation by certain newspapers, and had referred the matter to the Medical Association. The Association had expressed the view that the Council might advise the profession, possibly by a 'warning notice', of its disapproval of this type of advertising. The Executive Committee, however was not in favour of a 'warning notice' on this matter, and this view was accepted by the Council.

Dr. J. K. Bremer moved that a 'warning notice' should be issued concerning (*a*) the performance by medical practitioners (except in emergency) of professional acts for which they are inadequately trained or inadequately experienced, or under improper conditions or surroundings, and (*b*) the use of therapeutic measures for conditions for which such measures cannot reasonably be justified. He said that the 'Kux' operation provided a good example of the abuse that from time to time occurred—not only in surgery. The operation appeared to be done indiscriminately for peptic ulceration, asthma, epilepsy, parkinsonism and other forms of tremor, alcoholism, and other conditions. As soon as the operation was started in this country a newspaper campaign began. The lack of discernment shown in this campaign, said Dr. Bremer, was a disservice to the country. After discussion Dr. Bremer's motion was carried.

Articles in Lay Press 'authenticated' by Fictitious Name with Medical Qualifications

It was decided to write to the Newspaper Press Union calling attention to this practice, which would lead the public to infer that the views expressed in the articles necessarily had validity in the medical field, and asking if the Union would give consideration to the matter with a view to evolving some form of control of the practice.

DENTAL WORK BY DOCTORS

In 1947 the Council submitted a recommendation to the Minister that section 35(3) of Act 13 of 1928 should be amended by deleting the words, 'Nothing in this section contained shall be construed as prohibiting a medical practitioner not registered also as a dentist from performing in the course of his practice acts pertaining to the practice of dentistry other than prosthetic dentistry'; and substituting therefor the words, 'A medical practitioner shall not perform any act pertaining to the practice of dentistry except in the case of emergency, and where there is no dentist reasonably available'.

The Minister did not proceed with any such amendment of the Act, and at the present meeting the Council decided to make the same recommendation to the Minister again.

Dental Hygienists

A motion by Dr. J. H. Rauch, that the value of the dental hygienist as an auxiliary in maintaining and promoting the dental health of the population in this country be investigated, was referred to the Dental Committee (with the right to coopt). Dr. Rauch said that he envisaged that the auxiliaries he was proposing should work under professional supervision and only in the public service. He referred to the successful work of such auxiliaries in New Zealand and the USA, and to the dental hygienists in the RAF and the British Army.

ATOMIC ENERGY ACT, 1958 AMENDMENT

A letter from the Atomic Energy Board was considered in which it was pointed out that under the Atomic Energy Act 1948, as last amended in 1958, it is illegal to possess or use any radio-active isotope, including radium and its disintegration products, except under written authority of the Board. This applies to medical practitioners equally with others. Authorities are issued only to persons who satisfy the Board's requirements *re* safe storage and handling facilities, users' qualifications, training and experience in radio-isotope techniques, the availability of medical physicists, suitable hospital facilities, etc. Heavy penalties are provided for contraventions. All unauthorized users of radium, etc. should

apply for written authority to the Secretary, Atomic Energy Energy Board, Private Bag 59, Pretoria.

REGISTRATION ETC.

Missionary medical practitioners (with limited rights of practice). The Executive Committee reported the following transactions: Four new applications for registration were received, of which 2 were granted and 2 were refused, and 3 registrations were renewed for a further period of 5 years. Three applications were received for a variation of the terms on which registrations had been granted; of these 1 was granted, 1 was granted in part, and 1 was refused. (One application, also, was granted, for extension of the period of registration—with limited rights of practice—of a medical practitioner working at the South African Institute for Medical Research.)

Exemption from registration. Exemption under section 74(*b*) was recommended to the Minister, and granted, as follows: 9 medical practitioners from abroad attending the South African Medical Congress, on the application of the Medical Association of South Africa; 4 medical practitioners from abroad, on the application of the Universities of Natal, Witwatersrand and Pretoria and the College of Physicians, Surgeons and Gynaecologists of South Africa, respectively; and 1 dentist from abroad on the application of the Dental Association of South Africa. In respect of 1 medical practitioner, also, the period of exemption was extended, on the application of the University of the Witwatersrand.

Erasure from register. The names of 23 medical practitioners and 5 dentists were removed from the register at their own request.

Exemption from fees. Ten medical practitioners and 1 dentist were granted exemption from annual registration fees on account of age.

Hospitals recognized as acceptable for internships. A revised list of hospitals acceptable for internship purposes in the Protectorates, the Rhodesias and other African territories was adopted, and several individual applications for the registration of internships (or its equivalent) in various parts of the world were granted. The general question of the recognition of institutions for the purpose of internship was held over for future consultation and consideration.

Specialists

The Council accepted the following degrees or diplomas as higher qualifications for the purpose of the rules relating to the registration of specialists: The degrees of M.Med. (Path.), M.Med. (Rad.D.), M.Med. (Ophth.) and M.Med. (L. et O.) of the University of Stellenbosch; and the F.C.P. (S.A.) of the College of Physicians, Surgeons and Gynaecologists of South Africa, with the special subject Psychiatry and with the special subject Neurology.

At the present meeting various hospitals or departments of hospitals in South Africa and abroad were granted recognition as teaching hospitals or departments or equivalents or as approved hospitals or departments for the purpose of the rules relating to the registration of specialists.

Approved hospitals. In 1958 the Council considered a recommendation made by the Medical Association to the effect that an additional category of hospital should be approved in terms of the rules for the recognition of specialists, viz. an approved hospital where service for a period of one year would count as one year towards the prescribed clinical experience in an applicant's speciality. The Council then (September 1958) adopted a resolution 'that the *status quo* be maintained *pro tem*'. At the present meeting, on the recommendation of its Specialist Committee, the Council decided to adhere to this resolution.

Medical Auxiliaries

Chiropodists. At the present meeting the Council accepted for the registration of chiropodists the Membership or Fellowship of the Society of Chiropodists (M.Ch.S. or F.Ch.S.) granted after training at one of the following British schools: (1) Birmingham General Dispensary School of Chiropody, (2) Chelsea School of Chiropody, (3) Edinburgh Foot Clinic and School of Chiropody, (4) Glasgow Foot Hospitals and College of Chiropody, (5) London Foot Hospital School of Chiropody, (6) Manchester Foot Hospital and School of Chiropody, and (7) Salford Royal Technical College School of Chiropody and Foot Clinic.

Physiotherapists. The Council also decided to add to the recognized qualifications for the registration of physiotherapists the Diploma in Physiotherapy of the Physiotherapists Registration Board of Western Australia, and also to request this Board to recognize for the registration of physiotherapists in Western Australia the South African qualifications, viz. the B.Sc. in Physiotherapy of the University of the Witwatersrand and the Diploma in Physiotherapy of the University of Cape Town and of the Pretoria Hospital School of Physiotherapy.

DISCIPLINARY

The findings and penalties in 5 formal enquiries into alleged offences (4 by the Executive Committee and 1 by a Disciplinary Committee) were confirmed by the Council, as follows:

1. A registered intern who had been convicted in the Johannesburg Court of practising as a medical practitioner without being registered. At the enquiry he was found guilty of improper conduct, and was reprimanded and cautioned.

2. A medical practitioner who had been convicted in the Magistrate's Court of failing to keep prescribed records of habit-forming drugs. At the enquiry he was found guilty of improper conduct, and was reprimanded and cautioned.

3. A medical practitioner who had been convicted in the Magistrate's Court of assault. At the enquiry he was found guilty of improper conduct, and was reprimanded and cautioned.

4. A medical practitioner who had been convicted in the Magistrate's Court for being wrongfully and unlawfully drunk. At the enquiry he was found guilty of improper conduct, and was cautioned.

5. A medical practitioner, who, after inquest proceedings, was charged at an enquiry (by a disciplinary committee) with improper or disgraceful conduct in that he administered an anaesthetic not in the presence and without the assistance of another medical practitioner to a patient on whom he was about to perform an operation (not in emergency). He was found guilty of improper conduct, and was reprimanded and cautioned.

One other case was referred for an enquiry, which had yet to be held.

The Council also confirmed the action of its Executive Committee in disposing of the following cases without formal enquiry:
Inquest proceedings reported: 3 cases (medical practitioners).
Complaints received: 17 against medical practitioners and 2 against dentists.
Cases referred from the Courts: 2 medical practitioners convicted respectively of assault and of failure to keep prescribed records of habit-forming drugs; 1 dentist declared after magisteria enquiry unfit to possess firearms; 1 medical practitioner charged with alleged malpraxis.
A medical student who had been suspended by his University.

Restoration to register. The application for restoration to the medical register of Dr. E.I.B., who over 10 years ago was convicted of criminal abortion and sentenced to imprisonment, was heard by the Council and was granted.

Section 80(*bis*)—alleged overcharging. Assessors were appointed in one case and in one other case the report of the assessors was noted (both concerning medical practitioners). In 8 cases (7 medical practitioners, 1 dentist), in which complaints or enquiries were received where there appeared to be no ethical implications, information about the procedure under section 80(*bis*) had been supplied in reply.

RULINGS OF THE COUNCIL

The following answers had been supplied by the Executive Committee to questions raised by enquirers, and were confirmed by the Council at this meeting:

It is undersirable for the names of medical practitioners to be published in a brochure issued by a holiday resort.

As X-ray envelopes are generally used, the provisions of ethical rule 1(5) concerning postal envelopes should be observed; that is to say, no information other than a return address in case of non-delivery should be printed on the envelopes. The name, qualifications, etc. of the radiologist should not be included. (The enquiry came from the Radiological Society of South Africa.)

An assistant or deputy medical officer of health may not be promoted to the position of M.O.H. unless the post of M.O.H. is advertised in accordance with ethical rule 19. (Enquiry from Society of Medical Officers of Health, State Medicine.)

A part-time medical officer of health was appointed at a salary of £60, and a new addition has been made in an annexure to his agreement providing for payment to him at prescribed rates for vaccinations and injections against infectious disease performed

by him. Since this is an alteration in the terms and conditions, ethical rule 19 requires that the post shall be re-advertised.

New posts for the bleeding of blood donors involving 1–5 sessions a week, of 1–4 hours' duration each, should be advertised in terms of rule 19.

The professional association of a registered medical practitioner with a medical physicist in the examination and treatment of patients with ionizing radiations and radio-isotopes is not unethical, provided the physicist does not take part in the actual medical examination of patients, and provided he works under the direction and control of a registered medical practitioner who takes responsibility for the patients. (The matter of the institution of a register of medical physicists as a category of supplementary health services personnel was referred to the appropriate committee of the Council.)

It is not unethical for a medical practitioner to be the owner or part-owner of a nursing home. Where the Companies Act requires the names of directors to be published, medical practitioners who are directors should not allow their degrees on qualifications, or the prefix Dr., to be used.

In view of ethical rule 20 it is undesirable for a medical practitioner to associate himself with a company concerned in the promotion of the sale of an ointment of which the formula will be secret.

The next meeting of the Council is to be held on 21 March 1960, in Cape Town.

PROFESSIONAL APPOINTMENTS

DRAFT REGULATIONS FOR SUBMISSION TO THE MINISTER FOR APPROVAL AND PROMULGATION

19. *Professional appointments other than—*

(i) *Appointments made under the Public Service Act.*

(ii) *Appointments made under the Hospital Ordinances.*

(iii) *Appointments of medical practitioners and dentists to academic or professional posts at universities, research institutions or similar institutions.*

A. *Medical Practitioners:*

(1) Acceptance by a medical practitioner of any professional appointment unless—

(*a*) a notice inviting applications for such appointment shall have been advertised in the South African Medical Journal and a similar advertisement or a notice drawing attention to that advertisement has been published in an English and an Afrikaans newspaper with a national circulation at least fourteen days prior to the date on which the appointment is to be made;

(*b*) details of the proposed contract are made available on request to the Council, the Medical Association of South Africa and all *bona fide* applicants;

(*c*) the contract of appointment is in writing and sets out clearly the professional services which the medical practitioner undertakes to render and the fees or remuneration payable to him for such services by the party with whom he has contracted;

(*d*) the contract provides (i) that the medical practitioner shall receive fees or remuneration exclusively from the party with whom he has contracted, and (ii) that that party shall be liable for such fees or remuneration;

(*e*) the said contract is on a basis which is not derogatory to the medical profession or inimical to the interests of the public.

(2) Permitting or suffering his name, profession, qualifications or address to appear on cards, handbills, pamphlets or notifications of any kind which refer in any way to him holding the said appointment; *provided* that a medical practitioner shall not be deemed to have breached this rule if a benefit society notifies its members that medical services have been arranged, details of which are available on application.

(3) Failure by a medical practitioner who has accepted a professional appointment to submit the contract originally entered into by him together with any subsequent amendments or addenda thereto for inspection by the Council within a period of 30 days reckoned from the date of the posting of a registered letter from the Registrar to such medical practitioner at his address as shown in the Register, calling upon him to submit his contract for inspection; *provided* that upon good cause this period may be extended by the Council.

B. *Dentists* :*

Note:

(i) The temporary appointment of a medical practitioner or dentist as a locum tenens for a period not exceeding 6 months shall be exempted from the requirements of the rule.

19(*bis*). *Professional appointments made under the Hospital Ordinances, and to academic or professional posts at universities, research institutions and similar institutions:*

(1) Acceptance by a medical practitioner or a dentist of any professional appointment under a Hospital Ordinance or any academic or professional appointment to a university, research institution or similar institution unless—

(*a*) a notice inviting applications for such appointment shall have been advertised, in the case of a medical practitioner in the South African Medical Journal, or in the case of a dentist in the Journal of the Dental Association of South Africa, and a similar advertisement or a notice drawing attention to that advertisement has been published in an English and an Afrikaans newspaper with a national circulation at least fourteen days prior to the date on which the appointment is to be made;

(*b*) details of the terms and conditions under which the proposed appointment is to be made are made available on request to the Council, to the Medical Association of South Africa in the case of the proposed appointment of a medical practitioner, and to the Dental Association of South Africa in the case of the proposed appointment of a dentist, and to all *bona fide* applicants;

(*c*) the contract of appointment is in writing and sets out clearly the professional services which the medical practitioner or dentist undertakes to render and the fees or remuneration payable to him for such services by the party appointing him.

Notes

(i) The temporary appointment of a medical practitioner or dentist as a locum tenens for a period not exceeding 6 months shall be exempted from the requirements of the rule.

(ii) Transfers or promotions within a service will not be regarded as new appointments and such appointments and such positions need not be re-advertised.

* This portion omitted — *Editor.*

WORLD LIST OF INTERNATIONAL MEETINGS (cont'd)

1960

Food and Agriculture Organization of the United Nations, Regional Conference for Africa, Africa, 2nd half 1960. Viale delle Terme di Caracalla, Rome, Italy.

Food and Agriculture Organization of the United Nations, Technical Conference on grain, legumes and human nutrition, Africa, 1960. Viale delle Terme di Caracalla, Rome, Italy.

Sixth Inter-American Congress of Cardiology, Rio de Janeiro, 1960. Inter-American Society of Cardiology, 300 av. Cuauhte 'moc, Mexico 7, D.F., Mexico.

International Conference on the Effect of Ionizing Radiations on Living Cells, 1960. UNESCO, 9 place de Fontenoy, Paris 7e, France.

Second International Conference on Thrombosis and Embolism, Rome, 1960. Prof. di Guglielmo, Président du Congres, Viale di Villa Graziolo 1, Rome, Italy.

Ninth International Congress of Catholic Physicians, Munich, 1960. Dr. Müller, Herzog-Max-Strasse, Bemberg, Germany.

International Congress of Medical Laboratory Technologists, Strasbourg, 1960. R. J. Lavington, Co-secretary, 9 Harley Street, London, W. 1.

International Federation of Medical Student Associations, Clinical Conference, Poland, 1960. Hans Langgård, Secretary General, IFMSA, I.M.C.C. Domus Medica, 12B Kristianagade, Copenhagen ø, Denmark.

International Meeting on Exfoliative Cytology, 1960 or 1961. Dr. Ruth M. Graham, Secretary, International Academy of Gynecological Cytology, Roswell Park Memorial Institute, 666 Elm Street, Buffalo 3, N.Y., USA.

International Social Security Association, Permanent Medico-social Committee, 1960. Leo Wildmann, Secretary-General, ISSA, 154 rue Lausanne, Geneva, Switzerland.

Fifth Congress of the International Society for Fat Research, under the auspices of the University of Warsaw and the Polish Academy of Sciences, Warsaw, 1960. Andre Gain, Secretary-General, c/o Institut de Recherches pour les Huiles et Oléagineux, 11 sq. Petrarque, Paris 16e, France.

Sixth International Symposium on Food Additives, Spain, 1960. Erwin Gradnauer, Documentation Center, International Commission for Agricultural Industries, 18 av. de Villars, Paris 7e, France.

International Symposium on Quantitative Methods in Pharmacology and Toxicology, 1960. Biometric Society, Rothampsted Experimental Station, Harpenden, Herts., England.

Fourth International Symposium on Venereal Diseases and the Treponematoses, Warsaw, 1960. Dr. Pierre Durel, Médecin Chef du Dispensaire de Salubrité, Hôpital Saint-Lazare, 14 rue des Carmes, Paris 5e, France. To coincide with a symposium organized by the International Union Against Venereal Diseases and the Treponematoses.

Congress of the International Union of Scientific Psychology, 1960. Prof. Otto Klineberg, Secretary-General, IUSP, c/o Department of Psychology, Columbia University, New York 27, N.Y., USA.

Medical Women's International Association, General Assembly, Baden-Baden, Germany, 1960. Dr. Grete Albrecht, President, Organizing Committee, Heilwigstrasse 12, Hamburg 20, Germany.

Scandinavian Military Surgeons Association, Congress, Stockholm, 1960. International Committee of Military Medicine and Pharmacy, Hôpital Militaire, 79 rue St. Laurent, Liège, Belgium.

Scandinavian Psychological Society, Congress, Olso, 1960. Prof. C. G. Bernhar, Department of Psychology II, Karolinska Institutet, Stockholm 60, Sweden.

World Federation for Mental Health, 2nd Conference on Mental Health in Africa South of the Sahara, 1960. Administrative Headquarters, 19 Manchester Street, London, W. 1.

World Federation of Occupational Therapists, Council meeting, Australia, 1960. C/o Liverpool School of Occupational Therapy, Victoria Road, Huyton, Liverpool, England.

World Health Organization, Technical Meeting on malaria eradication, 1960. WHO, Palais des Nations, Geneva, Switzerland.

World Meeting on Coffee, 1960. World Health Organization, Palais des Nations, Geneva, Switzerland.

World Health Organization, 25th Executive Board Session. January 1960. Palais des Nations, Geneva, Switzerland.

Fourth International Symposium on Radioactive Isotopes, Bad Gastein, Austria, 7-10 January 1960. Dr. R. Hofer, Isotopenlaboratorium der Medizenische Universitäts Klinik, 13 Garnisongasse, Vienna 9, Austria.

Sixth Pan American Congress of Ophthalmology, Caracas, Venezuela, 31 January-7 February 1960. Prof. Moacyr E. Alvaro, Executive Director, Pan American Association of Ophthalmology, Consolação 1151, São Paulo, Brazil.

Symposium on Cultural and Metabolic Aspects of Moulds, Rome, March/April 1960. G. Sykes, Bootes Pure Drug Co. Ltd., Microbiology Division, Standard Department, West Bridgford, Nottingham, England.

Symposium on Continuous Culture of Micro-organisms, London, 31 March-1 April 1960. R. Elsworth, Secretary, Organizing Committee, c/o Ministry of Supply, Microbiological Research Establishment, Porton, Salisbury, Wilts., England.

Fifth International Congress of Legal Medicine and Social Medicine, Vienna, April 1960. Prof. William Holczabeck, Secretary-General, Sensegasse 2, Vienna, Austria.

International Symposium on Inhaled Particles and Vapours, Oxford, England, April 1960.

Symposium on Microbiological Genetics, London, April 1960. Prof. B. W. Lacey, Department of Bacteriology, Westminster Medical School, London, S.W. 1.

International Anaesthesia Research Society, 34th Congress, Washington, D.C., 4-7 April 1960. Dr. A. William Friend, Executive Secretary, E. 107 and Park Lane, Cleveland 6, Ohio, USA.

Seventh International Congress of Anatomy, New York, 11-16 April 1960. Dr. Don. W. Fawcett, Department of Anatomy, Cornell University Medical College, 1300 York Ave., New York 21, N.Y., USA.

First Congress of the European Society of Ophthalmology, Athens, 18-22 April 1960. Prof. P. Velissaropoulos, Secretary-General, c/o Ophthalmology Clinic, Faculty of Medicine, University of Athens, 26 rue de l'Université, Athens, Greece.

Meeting of the International Organization Against Trachoma, Athens, 20 April 1960. Dr. J. Sedan, Secretary-General, 94 rue Sylvabelle, Marseilles, France.

Sixth International Congress of Gastro-enterology, Leiden, 20-24 April 1960. Dr. C. Schreuder, Secretary, Association of National European and Mediterranean Societies of Gastro-enterology, c/o Academisch Zickenhuis, Leiden, The Netherlands.

International Academy of Pathology, 49th Annual Meeting, Memphis, 25-27 April 1960. Dr. F. K. Mostofi, Armed Forces Institute of Pathology, Washington 25, D.C., USA.

First European Congress on the History of Hospitals, Reggio Emilia, Italy, May 1960. Prof. Dott. Corrado Corghi, Centro Italiano di Storia Ospitaliera, Arcispedale S. Maria Nuova, Via Roma 31, Reggio Emilia, Italy.

International Association for Bronchology, 10th Congress, Lyons, May 1960. Prof. Dr. Pierre Galy, Secretary-General, 16 rue Emil-Zola, Lyons, France.

Eleventh International Congress of Thalassotherapy, Estoril, Portugal, May 1960. Dr. Henry Bith, 29 rue Hamelin, Paris 16e, France.

Latin American Union of Societies of Phthisiology, 12th Congress, Brazil, May 1960. 26 de Marzo 1065, Montevideo, Uruguay.

Thirteenth World Health Assembly, Geneva, 3 May 1960. WHO, Palais des Nations, Geneva, Switzerland.

First International Congress of Phlebology, Chambéry, France, 6-8 May 1960. Dr. J. Marmasse, 3 rue de la République, Orléans (Loiret), France.

Radiation Research Society, Annual Meeting, San Francisco, 8-12 May 1960. E. L. Powers, Secretary-Treasurer, Argonne National Laboratory, Box 299, Lemont, Illinois, USA.

International College of Surgeons, 12th Biennial International Congress, Rome, 15-18 May 1960. Dr. Max Thorek, Secretary-General, ICS, 1516 Lake Shore Drive, Chicago 10, Illinois, USA.

Second Asian-Pacific Congress of Cardiology, 30 May-3 June 1960. Dr. Austin E. Doyle, Honorary Secretary, c/o Alfred Hospital, Melbourne, S. 1, Australia.

Fourth International Congress of Clinical Pathology, Madrid, 13-17 June 1960. Dr. J. Aparicio Garrido, Secretary-General, Sandoval 7, Madrid, Spain.

International Council of Group Psychotherapy, 3rd Congress, Paris, June 1960. Dr. Wellman J. Warner, Head, Department of Sociology and Anthropology, Graduate School of Arts and Sciences, New York University, Washington Square, New York 3, N.Y., USA.

International Academy of Pathology, Scientific Meeting, London, June 1960. Dr. F. K. Mostofi, Armed Forces Institute of Pathology, Washington 25, D.C., USA.

American Medical Association, Annual Meeting, New York, 26-30 June 1960. Dr. George F. Lull, 1535 N. Dearborn Street, Chicago 10, Illinois, USA.

OFFICIAL ANNOUNCEMENT : AMPTELIKE AANKONDIGING

VACANCY—ASSISTANT EDITOR

Applications are invited from medical practitioners for the full-time post of Assistant Editor in the service of the Medical Association of South Africa at its Head Office.

The salary scale attaching to the post is £2,180×60—2,600 per annum. The successful applicant must join the Association's Superannuation Fund.

Applications, which should contain details of status, qualifications and experience, must reach the Secretary, Medical Association of South Africa, P.O. Box 643, Cape Town, before 31 December 1959.

A. H. Tonkin
Secretary

Medical House
Cape Town
28 October 1959

VAKATURE—ASSISTENT-REDAKTEUR

Aansoeke word van geneeshere ingewag om die voltydse betrekking van Assistent-Redakteur in diens van die Mediese Vereniging van Suid-Afrika aan die Hoofkantoor.

Die salarisskaal aan die betrekking verbonde is £2,180×60—2,600 per jaar. Die suksesvolle applikant moet by die Vereniging se pensioenskema aansluit.

Aansoeke moet besonderhede van status, kwalifikasies en ondervinding insluit, en moet die Sekretaris, Mediese Vereniging van Suid-Afrika, Posbus 643, Kaapstad, bereik voor 31 Desember 1959.

A. H. Tonkin
Sekretaris

Mediese Huis
Kaapstad
28 Oktober 1959

IN MEMORIAM

ADAM MOSS, M.D.(R.U.I.) M.B., B.CH., B.A.O. (Qu. Univ. Belf.)

Dr. A. G. Blyth of Ladismith, writes:

Dr. Adam Moss died at 'Schoongesig', Firgrove, Cape, at the home of his son on 23 September 1959. He was in his 91st year.

During the years 1899–1901 Dr. Moss practised at Ladismith, Cape Province, and in this short period made a profound impression on the inhabitants of this town. Even today, after the lapse of 60 years there are old people who remember him with respect and affection.

In 1901 he returned to his native land and 50 years later was still in active general practice in West Kirby, Cheshire, England.

It was my great privilege to know Dr. Moss on his first return visit to South Africa in 1948. I was deeply impressed by his lovable personality, his serenity and wisdom, and the radiation of his essential goodness. Though I never saw him at work, I could well imagine him as the perfect family doctor—a true friend and guide to the many thousands he served during his long life.

PASSING EVENTS : IN DIE VERBYGAAN

Mr. H. E. Lewy, Cape representative for Medical Distributors (Pty.) Ltd., has moved into new premises at 20 Barrack Street, Cape Town. The showrooms and offices are on the ground floor of President House, facing Corporation Street and just around the corner from Plein Street. Mr. Lewy has extended an invitation to interested persons to call at his new showrooms. The telephone number, 41-1172, and P.O. Box number, 195 remain unchanged.

Mnr. H. E. Lewy, Kaapse verteenwoordiger van Medical Distributors (Edms.) Bpk., het getrek na 'n nuwe perseel te Barrackstraat 20, Kaapstad. Die vertoonkamers en kantore is op die grondverdieping van President Huis, teenoor Corporationstraat, en net om die hoek van Pleinstraat. Mnr. Lewy nooi belangstellendes uit om sy nuwe vertoonkamers te besoek. Die telefoonnommer, 41-1172, en die Posbus nommer, 195, bly onveranderd.

* * *

College of Physicians, Surgeons and Gynaecologists of South Africa. The Margaret Orford Memorial Lecture for 1959, which is arranged by the College, will be delivered by Dr. J. W. Schabort of Johannesburg, on Monday 16 November at 8.15 p.m. in the Harveian Lecture Theatre, Medical School, University of the Witwatersrand, Johannesburg. The title of the lecture is 'Oophorectomy. Is wanton removal justified by fact?'. Dr. Schabort will deliver the same lecture in Cape Town on Wednesday 9 December at 8.15 p.m. in the Physiology Lecture Theatre, Medical School, University of Cape Town. Members of the College and members of the Medical Association of South Africa are cordially invited to attend these lectures.

Kollege van Interniste, Chirurge en Ginekoloë van Suid-Afrika: Die Margaret Orford Gedenklesing vir 1959, wat deur die Kollege gereël word, sal op Maandag 16 November om 8.15 nm. in die Harveian Lesingsaal van die Mediese Skool, Universiteit van die Witwatersrand, Johannesburg, deur dr. J. W. Schabort van Johannesburg gehou word. Die onderwerp van die lesing is 'Oophorectomy. Is wanton removal justified by fact?'. Dr. Schabort sal dieselfde lesing in Kaapstad op Woensdag 9 Desember om 8.15 nm. is die Fisiologie-lesingsaal van die Mediese Skool, Universiteit van Kaapstad, hou. Lede van die Kollege en lede van die Mediese Vereniging van Suid-Afrika word vriendelik uitgenooi om die lesings by te woon.

* * *

Members are reminded that they should notify any change of address to the Secretary of the Medical Association of South Africa at P.O. Box 643, Cape Town as well as to the Registrar of the South African Medical and Dental Council, P.O. Box 205, Pretoria. Failure to advise the Association can only result in non-delivery of the *Journal*. This applies to members proceeding overseas as well as to those who change their addresses within the Union.

* * *

Gedissemineerde Sklerose. 'n Suid-Afrikaanse navorser wil graag al die bekende gevalle van gedissemineerde sklerose in hierdie land naspoor. Om die ondersoek te vergemaklik word alle dokters, wat van pasiënte met die siekte weet, versoek om die informasie aan die Redakteur van die *Suid-Afrikaanse Tydskrif vir Geneeskunde*, Posbus 643, Kaapstad, te stuur. Hierdie informasie sal dan aan die navorser wat die ondersoek onderneem, gestuur word, en hy sal dan self nadere inligting oor die pasiënte inwin by die persone wat die informasie verstrek het.

* * *

New Journal. A new Journal of the International League against Epilepsy has just been published. This Journal, called *Epilepsia*, will be published quarterly by the Elsevier Publishing Company, Amsterdam, and the Editor-in-Chief is Sir Francis Walshe of London. Messrs. D. van Nostrand Co. Ltd., as distributors of Elsevier medical books in the Commonwealth, will accept subscriptions to *Epilepsia*; their address is 358 Kensington High Street, London, W. 14.

The Editorial Board are aiming at as wide a generality of understanding of the many and complex problems involved in epileptic manifestations as can be achieved, and they hope to avoid a narrow or too technological outlook upon them. They desire to provide a journal in which will be found informed, original, and critical studies covering the fields of aetiology, pathogenesis, course, manifestations, investigations of every relevant kind, and treatment both medical and surgical. They also hope to encourage studies in the morbid anatomy of the epileptic brain.

Although dated March 1959, the first copy of this new Journal has only just been published, but the remaining numbers of volume 1 will be issued shortly in close succession, with publication thereafter at normal quarterly intervals. Subscriptions will be £2 17s. 0d. per volume (4 issues) and may be sent to Messrs. D. Van Nostrand (see address above) or to the publishing company at Spuistraat 110-112, Amsterdam-C, The Netherlands.

* * *

Radio-active Substances in Medicine. Mr. R. T. Butlin, the Cultural Adviser to the High Commissioner for the United Kingdom, has notified us that a bibliography on 'Radio active substances in medicine' has been compiled by the Medical Department of the British Council in London. This bibliography covers papers published during the first half of 1959. Interested persons may obtain copies on application to Mr. Butlin at the Office of the High Commissioner for the United Kingdom, Pretoria.

* * *

Mr. H. Gavlis, of 202 Osler Chambers, Johannesburg, has changed his residential telephone number to 45–5746. This number does not appear in the current Telephone Directory. His consulting room telephone remains as 23–0646.

* * *

Mr. Arthur Christos, formerly Managing Director of Protea Pharmaceuticals Ltd., has purchased a financial interest in the Pharmapak Co. (Pty.) Ltd., 256 Anderson Street, Johannesburg, and has assumed the position of Managing Director of this firm.

* * *

College of General Practitioners, Cape of Good Hope Faculty. A meeting of the newly founded Cape of Good Hope Faculty of the College of General Practitioners of South Africa was held in the E-floor Lecture Theatre, Groote Schuur Hospital, Observatory, Cape, on 25 October 1959. Prof. J. H. Louw was the guest speaker. He delivered the first lecture under the auspices of the College to a large and enthusiastic audience of general practitioners. Professor Louw spoke on 'The impairment of the circulation of the lower limbs', with special reference to acute arterial occlusion, chronic arterial disease, and varicose veins.

Many questions were asked by members of the audience. It was felt that regular discussions of a similar nature would be of great assistance to practitioners in their efforts to keep abreast of new approaches to common clinical conditions.

Kollege van Algemene Praktisyns, Fakulteit Kaap de Goede Hoop. 'n Vergadering van die pas-gestigte Fakulteit Kaap de Goede Hoop van die Kollege van Algemene Praktisyns van Suid-Afrika is op 25 Oktober 1959 gehou in die E-vloer Lesingsaal, Groote Schuur-Hospitaal, Observatory, Kaap. Prof. J. H. Louw het as gas-spreker opgetree. Hy het die eerste lesing onder die beskerming van die Kollege gelewer voor 'n groot en entoesiastiese gehoor van algemene praktisyns. Professor Louw het gepraat oor ‚Die belemmering van die sirkulasie van die onderste ledemate', met spesiale verwysing na akute arteriële afsluiting, chroniese arteriële siekte, en spatare.

Baie vrae is deur lede van die gehoor gevra. Daar word gevoel dat gereelde samesprekings van 'n soortgelyke aard baie daartoe sou kon bydra om praktisyns te help in hul pogings om op hoogte te bly van nuwe ontwikkelinge op die gebied van kliniese toestande wat algemeen voorkom.

* * *

Universiteit van Stellenbosch, Hart-long Groep. Die tweede maandelikse byeenkoms van die Hart-long Groep sal gehou word op 12 November in die groot lesingsaal, Karl Bremer-Hospitaal, Bellville, om 8.15 nm. Die program sal bestaan uit: (1) 'n lesing oor ‚'n Mikroskopiese studie van die perifere vate in diabetes mellitus' deur dr. C. L. Wicht, (2) 'n praatjie oor die rol van 'n radioloog in kardiologie deur dr. C. J. B. Muller, (3) ‚Bespreking van 'n interessante geval' deur dr. J. Stockenström, en (4) sosiale verkeer.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

VALLERGAN

Maybaker (S.A.) (Pty.) Ltd. announce that 10 mg. tablets of Vallergan brand trimeprazine tartrate are available now in a packing of 500 tablets in addition to the packing of 50 tablets. Vallergan is supplied, in addition, as a syrup containing 4 fl. oz. in each bottle. This presentation is indicated for the relief of pruritus in various dermatological conditions such as atopic dermatitis, neurodermatitis, chronic urticaria, and infantile eczema. It is also supplied as Vallergan *Forte* syrup for oral pre-anaesthetic medication of children, especially those of 30 to 50 lb. body-weight.

PRUVAGOL

Westdene Products (Pty.) Ltd. have supplied the following comparison of the staining properties of Pruvagol and gentian violet:

For some years now gynaecologists and general practitioners have recognized the value of Pruvagol in the treatment of monilia infections of the vagina. Previously, these conditions have only been susceptible to treatment with gentian violet but, although this was therapeutically on a par with Pruvagol, it has the disadvantage of badly staining both skin and linen.

Messrs. Camden Chemical Co. Ltd., manufacturers of Pruvagol, recently asked the Lux Washability Bureau to carry out a series of tests with Pruvagol cream, Pruvagol pessaries, and gentian violet to compare their staining properties and the readiness with which stains are removed during washing. These tests were made in June and July of this year. A selection of fabrics (linen, cotton, terylene, nylon, acetate, rayon, wool and silk) were stained with Pruvagol cream, Pruvagol pessary, and gentian violet, and the stains were left for 4 days. Attempts were then made to remove the stains by hand washing in Lux suds. The wool, silk, rayon and acetate were washed in lukewarm suds and the remaining fabrics in hand-hot suds. After one wash the Pruvagol cream stains were completely removed from the linen, cotton, terylene and acetate, and only very slight stains were left in the nylon, rayon, wool and silk. Pruvagol pessary stains disappeared from the terylene and acetate, and only slight to moderate stains were left in the other fabrics. The gentian violet, however, caused heavy or very heavy purple stains which could not be removed.

The hand wash on the cotton and linen samples was followed by a boiling treatment in Lux suds in an attempt to remove the stains still visible after hand washing, but the gentian violet stains were still moderately heavy. As boiling is not appropriate for the other fabrics, no further attempts were made to remove the stains from them.

Messrs. Westdene Products (Pty.) Ltd. are the South African agents and distributors for Messrs. Camden Chemical Co. Ltd.

NEO-DARROW PED

Pediatric Laboratories (Pty.) Ltd. announce the introduction of Neo-Darrow Ped, a stable flavoured electrolyte solution for use in the treatment of infantile diarrhoea.

In addition to the chlorides of sodium and potassium, Neo-Darrow Ped contains sodium citrate to correct the acidosis of gastro-enteritis. Glucose is added as an immediately assimilable carbohydrate for provision of calories and the antagonism of ketosis.

The ethical products of Pediatric Laboratories (Pty.) Ltd. are distributed throughout the Union by Petersen Ltd., Johannesburg and Cape Town.

BOOK REVIEWS : BOEKBESPREKINGS

HISTORY OF NEUROLOGY

A History of Neurology. By Walther Riese, M.D. Pp. 223. $4.00. New York: MD Publications, Inc. 1959.

Although most neurologists are thorough-going interactionists and empiricists their discipline remains one in which they are continually confronted with problems of mind-body relationship which they ignore as being irrelevant to the clinical problem. Professor Riese has written an admirable little book, which is really a review of the problems that arise in the mind-body situation and in the concepts of nervous energies. In 200 pages he has brought together a great deal of information, and on the basis of short quotations he analyses the contributions of philosophers and neurologists from Plato to Penfield, paying particular attention to the work of Hughlings Jackson and von Monakow; and if in the end his implication that the brain is an 'organ of mind' remains unsatisfactorily vague, he has at least given us a succinct summary of the history of neurological thought. Indeed the only criticism that one might level against this monograph is that its title is somewhat misleading, and it would be a great pity if one were to reject it as a chronological survey of neurology rather than reading it for what it is—an introduction to neurological ontology. J.M.MacG.

ACUTE INTERNAL DISEASES

Akute innere Krankheiten. 2 erweiterte und verbesserte Auflage. Diagnostische und therapeutische Hinweise in tabellarischer Übersicht. Von Prof. Dr. H. A. Kühn, Doz. Dr. H. Klepsig und Dr. E. Schildge. viii + 247 Seiten. DM 16.50. Stuttgart: Georg Thieme Verlag. 1959.

This issue is intended to serve the purpose of a pocket note book for the busy practitioner both from the point of differential diagnosis as well as of emergency treatment. By and large it may be said that its contents speak for themselves; it is a case of 'good wine needs no bush'. Every practitioner will know the value of a pocket note book dealing with all the essential diseases and their appropriate treatment. Each disease is summarized with its important signs and symptoms as well as the special investigation required to confirm the presumptive diagnosis. D.J.H.

CORRESPONDENCE : BRIEWERUBRIEK

DIE MEDIESE KONGRES EN AFRIKAANS

Aan die Redakteur: Dit spyt my dat ek iemand[1] te na gekom het omdat ek nie ook in my Presidentsrede by die opening van die Mediese Kongres op Oos-Londen, Afrikaans gebruik het nie. Ongelukkig was daar soveel ander formaliteite dat die tyd te kort geword het. As Afrikaners is ons trots daarop dat ons tweetalig is. Aangesien daar egter so baie oorsese gaste teenwoordig was, het ek dit as my plig beskou om ter wille van hulle my rede in Engels te lewer—en toe het die tyd my ongelukkig gevang.

As my vriend en kollega sy naam aan my wil stuur, sal ek vir hom 'n Afrikaanse vertaling van my toespraak laat kry.

P. F. H. Wagner
President
Mediese Vereniging van Suid-Afrika

Strelson-Huis
Uniestraat 44
Oos-Londen

1. Briewerubriek (1959): S. Afr. T. Geneesk., 33, 888.

DISCOURTESY

To the Editor: I thoroughly enjoyed the Congress at East London, and the Border Branch is to be congratulated on their wonderful organization and hospitality.

However, one matter jarred—the lack of courtesy shown to the chairmen and eminent overseas visitors at Sectional Meetings by some of our own colleagues. On several occasions I noticed that a number of practitioners entered the lecture rooms late when eminent overseas doctors were speaking. This in itself was a discourtesy. But what annoyed me more was that not a single colleague, when arriving late, bowed to the lecturer or the chairman of the Section.

I always thought such lack of good manners was reserved for Branch Council and Federal Council meetings only!

The behaviour of interns in hospitals is also decidedly uncouth. I have often noticed that when all seats are occupied in a doctor's room at a hospital by part-time general practitioners, specialists and interns, not a single intern will offer his seat to other senior men entering the room.

The general behaviour of interns is such as would never be seen in an overseas institution. These same doctors, who may go overseas for postgraduate study, will give South Africa a very bad name.

If lecturers in medical ethics at medical schools would inculcate good manners into their students, it would be to the good of the profession, and deans of medical schools should see that this is done.

I understand that medical students in some of the medical schools in this country are permitted to smoke during lectures. In Britain and on the Continent they would be summarily ordered out of the lecture room for this behaviour.

For my own part I correct the bad manners of interns I deal with in the most forcible language, if nothing else avails.

Takhaar

10 October 1959

RECENT ADVANCES AND NEWER CONCEPTS IN THYROID DISEASE

To the Editor: My attention has been drawn to a letter on the above subject from Dr. Hoffenberg[1] which was published in the *Journal* while I was overseas. Dr. Hoffenberg states he is amazed that I had not come across the fact that the possibility of carcinoma developing in the thyroid after radio-iodine investigation in children was mentioned in the voluminous literature on the subject.

I am fully aware that this possibility had been mentioned in various articles following the articles on carcinoma of the thyroid in children by Duffy and Fitzgerald[2,3] in 1950. All these suggestions were based on X-ray therapy and not on radio-iodine therapy or investigation. In fact, in my own paper on 'Carcinoma of the thyroid in children'[4] I quoted the articles by Duffy and Fitzgerald. They did not state, incidentally, whether the thyroid had been protected when the thymus was irradiated. I put this question to Dr. Duffy at a discussion on the subject at the Postgraduate Hospital in London at the time of the Cancer Congress in 1958. Dr. Duffy could not say whether the thyroid had been protected or not. All the references given by Dr. Hoffenberg refer to the danger of carcinoma developing in the thyroid, based on X-ray therapy and not on radio-iodine therapy or diagnosis.

In Dr. Hoffenberg's reference no. 4 (Editorial, 1958: Brit. Med. J., **2**, 962) it is stated that: 'The lowest total dose was 130 r and this was in the youngest child, who was aged 2 months at the time of radiation'. The highest total dose was 2,700 r. This was given both to a child of 6 months and a child of 13 years. These are very high doses for infants of a few months old. Doniach[5-9] noted an increased incidence of cancer of the thyroid in the rat after the administration of 1,100 r.

It is difficult to visualize the conditions under which anybody would undertake radio-iodine tests on infants of a few months old.

Dr. Hoffenberg's reference no. 5 is an article by Wilson *et al.* Blomfield is the 6th author in that group. Dr. Hoffenberg states 'I was pleased that Dr. Weinbren had chosen to quote Blomfield in support of his view, since the last quotation is taken from a paper written by Blomfield and his colleagues'.

I quoted an article by Blomfield *et al.*, Blomfield being the senior author, in support of my statement that radio-active iodine therapy was the treatment of choice. Blomfield had stated: 'An

ultimate permanent cure can be assured for all patients'. It must be obvious that it was not the same article to which Dr. Hoffenberg was referring, but Dr. Hoffenberg did not give the reference to indicate that it was not the same article. He made it appear that I had deliberately suppressed the reference from the article I had quoted.

The views in the article by Wilson *et al.*, are also based on X-ray therapy. It has to be noted that of the 9 cases which they report, 6 were infants aged 6 months or less. These were treated with X-radiation and not investigated or treated with radio-iodine, and some of the doses, as I have already indicated, were very heavy.

Wilson *et al.* refer to a test dose of 131-iodine resulting in an uptake of 15 μc. in a 15 g.-thyroid gland (100 r). Assuming a 50% uptake, this would mean a test dose of 30 μc. This is quite an unnecessarily high dose for an infant.

Farran[10] used 3-5 μc. of 131-iodine or 132-iodine in the adult, so that the dose in Wilson's calculations should only be 10 r and not 100 r. This is far below the minimum dose of X-radiation, mentioned in any case which has developed a carcinoma, and it indicates the difficulty of extrapolating from the effects of X-radiation to radio-iodine radiation.

I had asked Dr. Hoffenberg, who had advocated the use of 132-iodine, where he obtained it in South Africa, because 132-iodine has a half-life of 2½ hours. Dr. Hoffenberg's answer is: 'Incidentally, the latter (132-iodine) is very easily obtained in South Africa, since its preparation from 132-tellurium (half-life 77·7 hours) is a simple routine matter, performance of which is completely justified . . .'.

I have asked a number of medical men what they thought this sentence meant, and all stated that they took it to mean that 132-iodine was being used by Dr. Hoffenberg and by others in South Africa and that I was unaware of it. *The truth of the matter is that neither Dr. Hoffenberg nor anybody else has investigated a single case, child or adult, with 132-iodine in South Africa.* When questioned on this point at the Congress in East London the only answer that Dr. Hoffenberg could give was that they were going to use it when the facilities at Cape Town are increased. The misinterpretation of Dr. Hoffenberg's statement does not appear to be due to semantic difficulties by my colleagues or by myself.

In any case, Dr. Hoffenberg's answer is not valid because he himself stated that the preparation of 132-iodine is a simple routine matter. Cape Town has facilities for doing 131-iodine and it should not, therefore, be difficult to prepare the 132-iodine, either by the distillation process or by the 'milking' process of a tellurium column.

The fact of the matter is that 132-iodine is very useful as a research tool, where the same thyroid has to be investigated a number of times or where pregnant women and children have to be investigated (Halnan and Pochin[11]).

I put a question to Dr. Pochin on the same subject after his paper[11] was read, and he stated that he would use 132-iodine in pregnant women if essential. Personally, I do not think any radio-iodine should be used in pregnant women, not because of genetic risk or carcinogenic risk, but because of medico-legal risks.

132-iodine is not as useful as 131-iodine for the routine investigation of thyrotoxicosis. Only 1 test can be performed with 132-iodine, and that is the neck-thigh ratio, either at 1 hour or at 2 hours or both; whereas with 131-iodine a whole battery of tests can be performed.

This is, no doubt, the reason why my colleagues in private practice or in hospital practice have not used 132-iodine.

Dr. Hoffenberg's answer to my statement: 'The difficulty of doing a PBI test is just as great as doing radio-iodine tests and is not as useful' is as follows: ' . . . I made the point in my paper that plasma can be sent to suitably equipped laboratories—a practice widely followed in the USA, . . . ' Dr. Hoffenberg was writing for the benefit of the general practitioner in South Africa and not in the USA and one would gather from his statement that the estimations of PBI could be done by sending the plasma to Cape Town. It was stated, however, at the Congress in East London, in a discussion on an excellent paper by Dr. Lurie, that there are no facilities in Cape Town for doing PBI tests. While Dr. Hoffenberg can obviously not be held responsible for the lack of these facilities, why tell a general practitioner that he can get these tests done by sending the plasma to some laboratory without indicating that this cannot be done in Cape Town. How many general practitioners in Cape Town would bother to get plasma and then send it off to Johannesburg when he can ask the patient in Cape Town to go to the hospital or to a private radiotherapist to have a radio-iodine test done?

Dr. Hoffenberg counters my statement that radio-active iodine is the treatment of choice in most cases of hyperthyroidism, with: ' . . . there are authorities as eminent as Dr. Weinbren who support the view that treatment with 131-iodine should be reserved for those over the age of 45 years, . . .'. While this age limit of 45 years was favoured some 10 or 12 years ago, the limit has been lowered by many observers since then.

I was not posing as 'an eminent authority'. If Dr. Hoffenberg will not accept my statement, perhaps he will accept the following:

1. Dr. S. Feitelberg,[12] Director, Physics Department, Mount Sinai Hospital, New York, and Associate Clinical Professor of Radiology, College of Physicians and Surgeons, Columbia University, stated: 'In our series of little over 3,000 treated cases, with a follow-up of 1,600 of them, we have had only two that we consider as failures and in which we have discontinued iodine 131 therapy'. One of the two failures had a large 400 g. gland with an initial uptake of 75%, and on page 128, in a debate on this 45-year limit, Dr. Feitelberg states: 'We have felt that the practice of dropping the so-called age limit from 50 years to 40, sometimes to 30, approached the *reductio ad absurdum*. (We have rigidly kept a line at 18 years, the period of adolescent growth, when susceptibility to carcinogenesis appears to be great.) We are also concerned with the growing number of "exceptions" that were made by groups advocating an age limit'.

2. A review of the subject by Duffy[13] is of great significance; he originally drew attention to the possible association of radiation and cancer of the thyroid in children by his statement: 'With regard to the therapeutic use of iodine 131 in the adult patient (over 20 years of age), there is no reasonable argument for restriction on the basis of present data' . . . 'since there is no evidence, clinical or experimental, that radiation can cause cancer in adult thyroid tissue'.

3. An evaluation of radio-active iodine (131-iodine) as a treatment for hyperthyroidism in the *New England Journal of Medicine* by Cassidy and Astwood.[14] Astwood is Professor of Medicine at Tuft's University School of Medicine, and Senior Physician, New England Center Hospital. Cassidy and Astwood make the following statements:

The patient's age was given less consideration than the other factors, though no children were given radio-iodine. The youngest patient was 21. Finally, they state: 'Radio-iodine therapy is clearly superior to surgical treatment. Although it shares the hazard of myxoedema, there is no mortality, no vocal cord paralysis, no tetany, and a negligible chance of recurrence'.

One could go on almost indefinitely quoting people like Professor Astwood, who was one of the first to use radio-active iodine.

My admiration for the enthusiastic research group who are doing extremely good work at Cape Town, for instance on aldosterone estimations by Dr. Lurie, which are not done anywhere else in South Africa, is not lessened by misleading statements on the subject of 132-iodine and the facilities for doing the PBI test, nor by such futile and puerile reasoning as: 'authorities as eminent as Dr. Weinbren', contained in the letter of Dr. Hoffenberg, who apparently is a member of the team.

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